CONSTRUCTION PLANS FOR

CITY OF SEGUIN
BS 123 12" WATER MAIN LOOP
PHASE II AND III

IN
THE CITY OF SEGUIN
GUADALUPE COUNTY, TEXAS
AUGUST 2014

CLIENT:

THE CITY OF Seguin TEXAS

205 N. RIVER ST
PO BOX 591
SEGUIN, TEXAS 78156
(830) 401-2776
ATTN: JOE RAMOS, P.E., CITY ENGINEER

ENGINEER:

klotz associates

7550 IH-10 WEST
NORTHWEST CENTER, SUITE 300
SAN ANTONIO, TEXAS 78229
T 210.736.0425 F 210.736.0405
SANANTONIO.OFFICE@KLOTZ.COM
TEXAS PE FIRM REG. # F-929

SURVEYOR:

BETTERSWORTH & ASSOCIATES, INC.

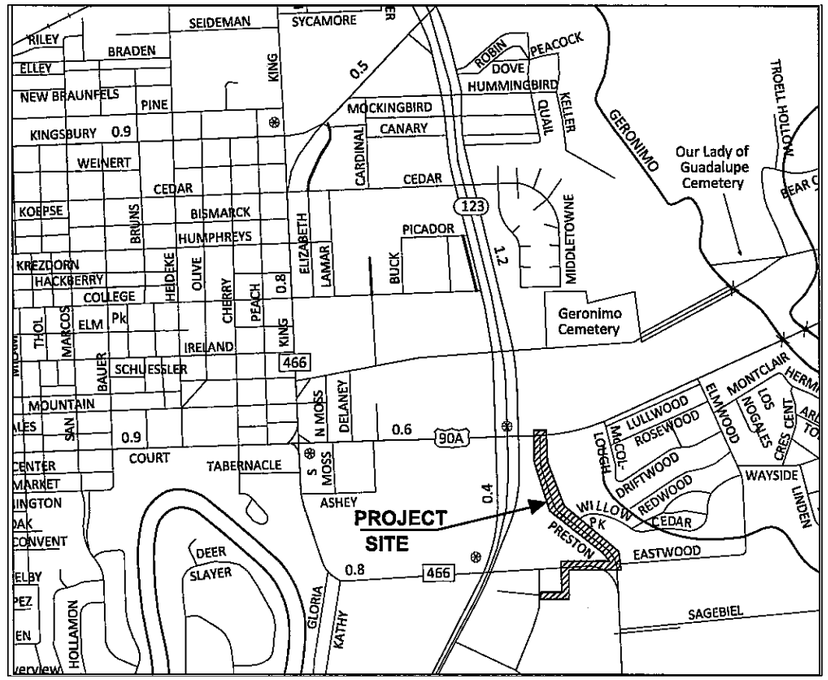
111 E. MOUNTAIN STREET
SEGUIN, TEXAS 78155
(830) 379-5552

GEOTECHNICAL:

Frost GeoSciences

13402 WESTERN OAK
HELOTES, TEXAS 78023
(210) 372-1315

PROJECT NO: FGS-G09133



VICINITY MAP

N.T.S.

SHEET INDEX:

C0.0	COVER SHEET
C1.0	GENERAL NOTES
C2.0	12" WATER MAIN QUANTITIES
C3.0	OVERALL PROJECT LAYOUT
C4.0	TRAFFIC CONTROL PLAN CONVENTIONAL ROAD SHOULDER WORK TCP(2-1)-12
C5.0	TRAFFIC CONTROL PLAN CONVENTIONAL ROAD SHOULDER WORK TCP(2-2)-12
C6.0	TEMPORARY EROSION SEDIMENT AND WATER POLLUTION CONTROL MEASURES EC(1)-09
C7.0	TEMPORARY EROSION SEDIMENT AND WATER POLLUTION CONTROL MEASURES EC(3)-93
C8.0	TEMPORARY EROSION SEDIMENT AND WATER POLLUTION CONTROL MEASURES EC(4)-93
C9.0	TEMPORARY EROSION SEDIMENT AND WATER POLLUTION CONTROL MEASURES EC(5)-93
C10.0	TEMPORARY EROSION SEDIMENT AND WATER POLLUTION CONTROL MEASURES STANDARDS 1
C11.0	WATERLINE PLAN AND PROFILE BEGIN PROJECT TO STA 19+00.00
C12.0	WATERLINE PLAN AND PROFILE STA 19+00.00 TO STA 28+40.00
C13.0	WATERLINE PLAN AND PROFILE STA 28+40.00 TO STA 38+00.00
C14.0	WATERLINE PLAN AND PROFILE STA 38+00.00 TO END PROJECT
C15.0	WATERLINE CONSTRUCTION DETAILS SHEET 1 OF 4
C16.0	WATERLINE CONSTRUCTION DETAILS SHEET 2 OF 4
C17.0	WATERLINE CONSTRUCTION DETAILS SHEET 3 OF 4
C18.0	WATERLINE CONSTRUCTION DETAILS SHEET 4 OF 4

STATE OF TEXAS
LUIS A. CUELLAR
89656
REGISTERED PROFESSIONAL ENGINEER

08/01/2014

KLOTZ JOB NO. 0131.001.001

SHEET NO.
C 0.0

CONSTRUCTION NOTES

1. ALL CONSTRUCTION SHALL REFER TO CURRENT SAN ANTONIO WATER SYSTEM (SAWS) SPECIFICATIONS AND CITY STANDARD DETAILS UNLESS OTHERWISE SPECIFIED IN THE PLANS.
2. ALL CONSTRUCTION SHALL ALSO REFER TO THE CITY OF SEGUIN CONSTRUCTION STANDARD SPECIFICATIONS, AND TEXAS DEPARTMENT OF TRANSPORTATION (TXDOT) WHERE APPLICABLE.
3. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS AND VERIFYING APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PLANS AND OTHER DOCUMENTS AS APPROVED BY ALL OF THE PERMITTING AUTHORITIES.
4. THE CONTRACTOR SHALL GIVE THE CITY A MINIMUM OF 48 HOURS NOTICE BEFORE BEGINNING EACH PHASE OF CONSTRUCTION.
5. CONTRACTOR SHALL PROTECT ALL BENCHMARKS AND PROPERTY MONUMENTATION AND SHALL REPLACE OR REPAIR AT HIS OWN EXPENSE, BENCHMARKS AND MONUMENTATION DISTURBED DURING CONSTRUCTION.
6. THE AMERICANS WITH DISABILITIES ACT (ADA) GUIDELINES, BOTH FEDERAL AND STATE ARE TO BE INCORPORATED IN ALL CONSTRUCTION DOCUMENTS. IF ANY CRITERIA CANNOT BE MET THEN THE ENGINEER IS TO BE ALERTED OF THE CONDITION AND INFORMED OF THE MEASURES THAT WOULD BE NECESSARY TO BE IN CONFORMANCE.
7. EQUIPMENT AND MATERIALS SHALL BE STORED IN AREAS APPROVED BY THE CITY OF SEGUIN. CONSTRUCTION AND STORAGE AREAS SHALL BE KEPT NEAT AND CLEAN.
8. CONTRACTOR TO VERIFY THE ELEVATIONS OF ALL TIE–IN POINTS FOR INSTALLATION OF UTILITIES, CURB & GUTTER AND PAVING.
9. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN PLAN AND FIELD CONDITIONS PROMPTLY UPON DISCOVERY. ANY CONFLICT DISCOVERED WITHIN THE CONSTRUCTION PLANS SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER FOR CLARIFICATION. FAILURE TO DO SO SHALL RESULT IN CONTRACTOR'S LIABILITY FOR ISSUES ARISING FROM SUCH CONFLICTS OR DISCREPANCIES.
10. ALL VEGETATION, ROOT SYSTEMS, TOPSOIL, REFUSE AND OTHER DELETERIOUS, NON–SOIL MATERIAL SHALL BE STRIPPED FROM THE PROPOSED CONSTRUCTION AREAS. CLEAN TOPSOIL MAY BE STOCKPILED AND REUSED LATER IN LANDSCAPED AREAS.
11. ALL AREAS TO BE FILLED SHALL BE IN ACCORDANCE WITH GEOTECHNICAL REPORT, PROJECT NO. FGS–G09133 DATED JANUARY 8, 2010, WHICH CAN BE REVIEWED AT THE OFFICE OF ENGINEER.
12. ALL ROADWAY AND PAVING CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST REVISION OF THE CITY OF SEGUIN PUBLIC WORKS STANDARDS AND SPECIFICATIONS FOR CONSTRUCTION.
13. UPON COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL REMOVE ALL SILT, DEBRIS AND SEDIMENT FROM THE CURB INLETS.
14. REPLACED CONDUITS FOR SITE LIGHTING SHALL BE INSTALLED, BACKFILLED AND PROPERLY COMPACTED PRIOR TO THE PLACEMENT OF BASE, PAVEMENT, AND CURB & GUTTER.
15. THE CONTRACTOR SHALL REMOVE ALL DEBRIS, VEGETATION WHICH HAS BEEN EXCAVATED, LUMBER, CONCRETE, ETC., FROM THE CONSTRUCTION SITE AND PROPERLY DISPOSED.
16. ALL EXISTING UTILITIES TO BE FIELD VERIFIED. CONTACT DIG–TESS AT 1–800–344–8377 BEFORE DIGGING.
17. OFF–STREET AND OFF–SITE PARKING SHALL BE PROVIDED AND MAINTAINED THROUGHOUT CONSTRUCTION.
18. NECESSARY BARRICADES, SUFFICIENT LIGHTS, SIGNS AND OTHER TRAFFIC CONTROL DEVICES AS MAY BE NECESSARY FOR THE PROTECTION AND SAFETY OF THE PUBLIC SHALL BE PROVIDED IN ACCORDANCE WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2011 EDITION AND MAINTAINED WHEN WORKING IN CLOSE PROXIMITY TO PUBLIC ROADS.
19. BARRICADING, TRAFFIC CONTROL, AND PROJECT SIGNS SHALL CONFORM TO "STATE DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION BARRICADING AND CONSTRUCTION STANDARDS" AND THE CITY OF SEGUIN STANDARDS.
20. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN ENTERING MANHOLES, PIPES OR OTHER STRUCTURES SHOWN ON THE PLANS. AT A MINIMUM, THESE PIPES AND STRUCTURES SHALL BE PROPERLY VENTILATED.

TRENCH NOTES

1. IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS AND THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS, ALL TRENCHES OVER 5 FEET IN DEPTH IN EITHER HARD AND COMPACT OR SOFT AND UNSTABLE SOIL SHALL BE SLOPED, SHORED, SHEETED, BRACED OR OTHERWISE SUPPORTED. FURTHERMORE, ALL TRENCHES LESS THAN 5 FEET IN DEPTH SHALL ALSO BE EFFECTIVELY PROTECTED WHEN HAZARDOUS GROUND MOVEMENT MAY BE EXPECTED.
2. IN ACCORDANCE WITH THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS, WHEN EMPLOYEES ARE EXPECTED TO BE IN TRENCHES 4 FEET DEEP OR MORE. ADEQUATE MEANS OF EXIT, SUCH AS A LADDER OR STEPS, MUST BE PROVIDED AND LOCATED SO AS TO REQUIRE NO MORE THAN 25 FEET OF LATERAL TRAVEL.
3. IF DURING CONSTRUCTION IT IS FOUND THAT TRENCHES ARE IN FACT 5 FEET DEEP OR MORE IN DEPTH OR TRENCHES LESS THAN 5 FEET IN DEPTH ARE IN AN AREA WHERE HAZARDOUS GROUND MOVEMENT IS EXPECTED, ALL CONSTRUCTION SHALL CEASE. THE TRENCHED AREA SHALL BE BARRICADED AND THE ENGINEER NOTIFIED IMMEDIATELY. CONSTRUCTION SHALL NOT RESUME UNTIL APPROPRIATE TRENCH SAFETY SYSTEM DETAILS ARE SUBMITTED TO AND ACCEPTED BY THE CITY OF SEGUIN.
4. EXCAVATION SHALL BE PHASED SO THAT EXCAVATED AREA IS NOT OPEN FOR MORE THAN 48 HOURS. IT IS PREFERRED THAT TRENCHES BE EXCAVATED AND BACK FILLED WITHIN THE SAME DAY.

GENERAL WATER NOTES

1. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE APPROVED BY THE CITY OF SEGUIN AND COMPLY WITH THE FOLLOWING AS APPLICABLE:
   A. CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) FOR WATER SYSTEMS.
   B. CURRENT TXDOT "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND DRAINAGE."
   C. CURRENT CITY OF SEGUIN "STANDARD SPECIFICATIONS FOR CONSTRUCTION."
   D. CURRENT CITY OF SEGUIN "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION."
2. THE CONTRACTOR IS TO NOTIFY AND MAKE ARRANGEMENTS WITH THE CITY OF SEGUIN UTILITIES/ PUBLIC WORKS AND THE INVOLVED HOME RESIDENTS AND/OR PROPERTY OWNERS 48 HOURS PRIOR TO EXCAVATION.
3. THE LOCATION AND DEPTHS OF EXISTING UTILITIES, INCLUDING SERVICE LATERALS, SHOWN ON THE PLANS ARE APPROXIMATE ONLY. ACTUAL LOCATIONS AND DEPTHS MUST BE FIELD VERIFIED BY THE CONTRACTOR AT A MINIMUM OF 500–FEET AHEAD OF THE SCHEDULED CONSTRUCTION AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UTILITY SERVICE LINES AS REQUIRED FOR CONSTRUCTION AND TO PROTECT THEM DURING CONSTRUCTION.
4. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION WHETHER SHOWN ON PLANS OR NOT, AND TO PROTECT THE SAME DURING CONSTRUCTION.

   CITY OF SEGUIN PUBLIC WORKS:

   CITY ENGINEER 830–401–2439

   UTILITY ADMINISTRATION 830–401–2776

   TEXAS STATE WIDE ONE CALL LOCATOR 1–800–344–8377

   TXDOT AREA OFFICE CONTACT: BRYAN ELBEL AT 830–609–0707

   GUADALUPE VALLEY ELECTRICAL COOPERATIVE (GVEC) 830–401–8326

   SPRING HILL WATER SUPPLY CORPORATION 830–379–7683

   PETROLEUM PIPELINE 1–800–467–5686
   CITGO REPRESENTATIVE MUST BE PRESENT DURING CONSTRUCTION TO ENSURE INTEGRITY OF PIPELINE AS MANDATED BY THE TEXAS RAILROAD COMMISSION. CONTACT STEPHEN SHANDLEY 210–662–0055 DURING EXCAVATION OR BORING UNDER PIPELINE.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL OR BETTER CONDITION FROM DAMAGES DONE TO EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, SIDEWALKS, LANDSCAPING AND STRUCTURES.
6. THE CONTRACTOR SHALL AVOID CUTTING ROOTS LARGER THAT ONE INCH IN DIAMETER WHEN EXCAVATING NEAR EXISTING TREES. EXCAVATION IN VICINITY OF TREES SHALL PROCEED WITH CAUTION. THE CONTRACTOR SHALL CONTACT THE CITY PLANNING DEPARTMENT AT 830–401–2306 FOR GUIDANCE. CITY OF SEGUIN CONSTRUCTION INSPECTOR SHALL ALSO BE NOTIFIED.
7. THE CONTRACTOR SHALL NOT PLACE ANY WASTE MATERIALS IN THE 100–YEAR FLOOD PLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOOD PLAIN PERMIT.
8. PRIOR TO TIE–INS, ANY SHUTDOWNS OF EXISTING MAINS OF ANY SIZE MUST BE COORDINATED WITH THE CITY OF SEGUIN AT LEAST ONE WEEK OR MORE IN ADVANCE OF THE SHUTDOWN. THE CONTRACTOR MUST ALSO PROVIDE A SEQUENCE OF WORK AS RELATED TO THE TIE–INS; THIS IS AT NO ADDITIONAL COST TO THE CITY OF SEGUIN OR THE PROJECT AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SEQUENCE THE WORK ACCORDINGLY.
9. THE CITY OF SEGUIN SHALL MACHINE CHLORINATE NEW WATER MAINS.
10. THE CONTRACTOR SHALL NOT PROCEED WITH ANY PIPE INSTALLATION WORK UNTIL THEY OBTAIN A COPY OF THE APPROVED PERMIT AND HAS BEEN NOTIFIED BY THE CITY OF SEGUIN CONSTRUCTION INSPECTION DIVISION TO PROCEED WITH THE WORK AND HAS ARRANGED A MEETING WITH THE INSPECTOR AND CONSULTANT FOR THE WORK REQUIREMENTS.
11. NO METER BOXES TO BE SET IN DRIVEWAYS. ANY METER BOXES SET IN DRIVEWAYS WILL BE RELOCATED AT CONTRACTOR'S EXPENSE.

SUPPLEMENTARY

12. NO EXTRA–PAYMENT SHALL BE ALLOWED FOR WORK CALLED FOR ON THE PLANS BUT NOT INCLUDED ON THE BID SCHEDULE. THIS INCIDENTAL WORK WILL BE REQUIRED AND SHALL BE INCLUDED UNDER THE PAY ITEM TO WHICH IT RELATES.
13. CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.
14. WORK COMPLETED BY THE CONTRACTOR WHICH HAS NOT RECEIVED A WORK ORDER OR THE NOTICE TO PROCEED FROM THE CITY OF SEGUIN INSPECTION DIVISION WILL BE SUBJECT TO REMOVAL AND REPLACEMENT BY AND AT THE EXPENSE OF THE CONTRACTOR.
15. THE CONTRACTOR WILL KEEP THE AREA ON TOP OF AND AROUND THE WATER METER BOX FREE OF ALL OBJECTS AND DEBRIS.
16. WATER SYSTEM TO BE COMPLETELY RESTRAINED. RESTRAINED LENGTH CALCULATIONS ARE FOR P.V.C. PIPE BEDDED I COMPACTED GRANULAR MATERIAL EXTENDING TO THE TOP OF THE PIPE. THE NATIVE SOIL MATERIAL IS ASSUMED TO BE INORGANIC CLAY OF HIGH PLASTICITY. DEPTH OF BURY IS ASSUMED TO BE 5 FEET.

    NOTE: THESE CALCULATIONS ARE PROVIDED FOR REFERENCE. THE RESTRAINED LENGTHS SHALL BE VERIFIED BY CONTRACTOR BASED UPON THE CONDITIONS ENCOUNTERED DURING THE INSTALLATION. SEE THE SAN ANTONIO WATER SYSTEM (SAWS) SPECIFICATION BOOK AS REFERENCE.
17. THE CITY OF SEGUIN HAS ACCEPTED AND IMPLEMENTED THE SAN ANTONIO WATER SYSTEM (SAWS) SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION. ALL REFERENCES TO "THE CITY OF SAN ANTONIO" SHALL BE UNDERSTOOD AS "THE CITY OF SEGUIN.'

UTILITY NOTES

1. ALL WATER IMPROVEMENTS SHALL FOLLOW CITY OF SEGUIN SPECIFICATIONS AND REGULATIONS.
2. ALL REQUIRED PERMITS AND APPROVALS SHALL BE OBTAINED PRIOR TO CONSTRUCTION. A FORTY–EIGHT (48) HOUR NOTICE SHALL BE GIVEN PROIR TO BEGINNING ANY WATER AND WASTEWATER CONSTRUCTION IN PUBLIC R.O.W. OR PUBLIC EASEMENT. THE CONTRACTOR SHALL NOTIFY PROPER CITY OF SEGUIN OFFICIALS FOR MAIN CONSTRUCTION, AND WATER AND WASTEWATER TAP INSPECTIONS. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL VERIFY THE LOCATIONS AND INVERTS OF ALL UTILITIES.
3. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UTILITIES TO BE EXTENDED, TIED TO, OR ALTERED, OR SUBJECT TO DAMAGE/INCONVENIENCE BY THE CONSTRUCTION OPERATIONS.
4. NO OTHER UTILITY SERVICE/APPURTENANCES SHALL BE PLACED NEAR THE PROPERTY LINE, OR OTHER ASSIGNED LOCATION DESIGNATED FOR WATER AND WASTEWATER UTILITY SERVICE THAT WOULD INTERFERE WITH THE WATER AND WASTEWATER SERVICES.
5. FOR PRESSURE TAPS, FURNISH, INSTALL AND AIR TEST THE SLEEVE AND VALVE. CONCRETE BLOCKING SHALLL BE PLACED BEHIND AND UNDER ALL TAP SLEEVES TWENTY–FOUR (24) HOURS PRIOR TO MAKING THE WET TAP.
6. THRUST BLOCKING SHALL BE IN ACCORDANCE WITH THE SAN ANTONIO WATER SYSTEM SPECIFICATIONS.
7. ALL PUBLIC MAIN AND FIRE LINE PIPE SHALL BE PVC (AWWA C–900, DR–18). ALL DOMESTIC WATER PIPE SHALL BE C–900 PVC, DR–18.
8. FOR WATERLINE MAINS AT WASTEWATER CROSSINGS WHERE WATER AND SEWER ARE PARALLEL AND SEPERATION OR DISTANCE CAN NOT BE ACHIEVED AS PER TAC 30, 317.13 USE EXTRA STIFF SDR 26 PVC (ASTM D 2241) WITH A PSI OF 150.
9. EXTEND ALL EXISTING UTILITY MANHOLES, BOXES, COVERS, ETC. TO PROPOSED FINISH GRADE, UNLESS NOTED OTHERWISE.
10. FOR WATER LINE CROSSINGS WHERE THE MINIMUM 9 FOOT SEPARATION DISTANCE BETWEEN SEWER LINES AND WATER LINES/MAINS CANNOT BE MAINTAINED, THE INSTALLATION OF SEWER LINES SHALL BE IN STRICT ACCORDANCE WITH THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY RULES (31 TAC 217.13 APPENDIX E).
11. ALL PROPOSED ELECTRIC, PHONE, AND CABLE CONDUITS WILL BE PROVIDED WITH PULL STRINGS.
12. ALL ELECTRICAL WORK SHALL BE PER CITY OF SEGUIN STANDARDS.

EROSION AND SEDIMENTATION CONTROL NOTES

1. THE CONTRACTOR SHALL INSTALL EROSION/SEDIMENTATION CONTROLS AND TREE/NATURAL AREA PROTECTIVE FENCING PRIOR TO ANY SITE PREPARATION WORK (CLEARING, GRUBBING, OR EXCAVATION).
2. THE PLACEMENT OF EROSION/SEDIMENTATION CONTROLS SHALL BE IN ACCORDANCE WITH THE CITY OF SEGUIN'S CURRENT STANDARD AND THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN. CONTRACTOR SHALL BE REQUIRED TO PREPARE AND SUBMIT FOR CITY APPROVAL A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) TO BE PREPARED BY A LICENSED ENGINEER AND INCORPORATE DETAILS INCLUDED IN THESE PLANS, AS APPROPRIATE.
3. THE CONTRACTOR IS REQUIRED TO INSPECT THE CONTROLS AT WEEKLY INTERVALS AND AFTER SIGNIFICANT RAINFALL EVENTS TO ENSURE THEY ARE FUNCTIONING PROPERLY. THE PERSON(S) RESPONSIBLE FOR MAINTENANCE OF CONTROLS SHALL IMMEDIATELY MAKE ANY NECESSARY REPAIRS TO DAMAGED AREAS. SILT ACCUMULATION AT CONTROLS MUST BE REMOVED WHEN THE DEPTH REACHES SIX (6) INCHES.
4. PRIOR TO FINAL ACCEPTANCE BY THE CITY, HAUL ROADS AND WATERWAY CROSSINGS CONSTRUCTED FOR TEMPORARY CONTRACTOR ACCESS MUST BE REMOVED. ACCUMULATED SEDIMENT REMOVED FROM THE WATERWAY AND THE AREA RESTORED TO THE ORIGINAL GRADE AND REVEGETATED. ALL LAND CLEARING DEBRIS SHALL BE DISPOSED OF IN APPROVED SOIL DISPOSAL SITES.
5. FIELD REVISIONS TO THE EROSION AND SEDIMENTATION CONTROL PLAN MAY BE REQUIRED BY THE CITY DURING THE COURSE OF CONSTRUCTION TO CORRECT CONTROL INADEQUACIES.
6. PERMANENT EROSION CONTROL: ALL DISTURBED AREAS SHALL BE RESTORED AS NOTED BELOW:
   A. A MINIMUM OF FOUR INCHES OF TOPSOIL SHALL BE PLACED IN ALL DISTRUBED AREAS, DRAINAGE CHANNELS (EXCEPT ROCK), AND BETWEEN THE PAVEMENT AND RIGHT–OF–WAY LINE.
   B. THE SEEDING FOR PERMANENT EROSION CONTROL SHALL BE APPLIED OVER AREAS DISTURBED BY CONSTRUCTION AS FOLLOWS:
      1. FROM SEPTEMBER 15 TO MARCH 1, SEEDING SHALL BE WITH A COMBINATION OF ONE (1) POUND PER 1000 SQUARE FEET OF UNHULLED BERMUDA AND SEVEN (7) POUNDS PER 1000 SQUARE FEET OF WINTER RYE WITH A PURITY OF 95% WITH 90% GERMINATION.
      2. FROM MARCH 2 TO SEPTEMBER 14, SEEDING SHALL BE WITH HULLED BERMUDA AT A RATE OF FOUR (4) POUNDS PER 1000 SQUARE FEET WITH A PURITY OF 95% WITH 85% GERMINATION.
   C. FERTILIZER SHALL HAVE AN ANALYSIS OF 15–15–15 AND SHALL BE APPLIED AT THE RATE OF 65 POUNDS PER ACRE.
   D. THE PLANTED AREA SHALL BE IRRIGATED OR SPRINKLED IN A MANNER THAT WILL NOT ERODE THE TOPSOIL BUT WILL SUFFICIENTLY SOAK THE SOIL TO A DEPTH OF SIX (6) INCHES. THE IRRIGATION SHALL OCCUR AT TEN–DAY INTERVALS DURING THE FIRST TWO MONTHS. RAINFALL OCCURRENCES OF 1/2 INCH OR MORE SHALL POSTPONE THE WATERING SCHEDULE FOR ONE WEEK.
   E. MULCH TYPE USED SHALL BE EITHER CELLULOSE FIBER, APPLIED AT A RATE OF 2000 POUNDS PER ACRE, OR WOOD FIBER MULCH APPLIED AT A RATE OF 2500 POUNDS PER ACRE.
   F. RESTORATION SHALL BE ACCEPTABLE WHEN THE GRASS HAS GROWN AT LEAST 1–1/2 INCHES HIGH WITH 95% COVERAGE PROVIDED NO BARE SPOTS LARGER THAN 16 SQUARE FEET EXIST.

   ALL CONSTRUCTED AND ALTERED DRAINAGE CHANNELS SHALL BE STABILIZED AND VEGETATED IMMEDIATELY AFTER FINAL GRADING.

TRAFFIC CONTROL NOTES

1. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING ANY REQUIRED TRAFFIC CONTROL DEVICES DURING CONSTRUCTION IN ACCORDANCE WITH THE TEXAS DEPARTMENT OF TRANSPORTATION'S "TEXAS MANUAL ON UNIFORM CONTROL DEVICES FOR STREETS AND HIGHWAYS". ALL CONTROL DEVICES, LAYOUTS, AND MAINTENANCE SHALL BE INCIDENTAL TO THE COST ASSOCIATED WITH BORING THE HIGHWAYS, ROADS AND STREETS INDICATED ON THE CONTRACT DRAWINGS.
2. WORK WITHIN TXDOT ROW SHALL CONFORM TO THE REQUIREMENTS OF THE UTILITY INSTALLATION PERMIT ISSUED BY THE TXDOT AND APPLICABLE TXDOT STANDARDS FOR UTILITY CONSTRUCTION AND TRAFFIC CONTROL.

THE CITY OF Seguin TEXAS

BS 123
12" WATER MAIN LOOP
PHASE II & III

FROM HWY 90A AT PRESTON SOUTH TO FM 466 (EASTWOOD DR) EAST AND SOUTH TO COUNTRY SIDE BOULEVARD.

CITY OF SEGUIN, TEXAS

klotz associates
7550 IH–10 West
Northwest Center, Suite 300
San Antonio, TX 78229
Phone: (210) 736–0405
Fax: (210) 736–0405
sanantonio.office@klotz.com
Texas PE Firm Reg. #F–929

SURVEY BENCHMARK:

BEARING BASED ON NAVD 1988 – TEXAS STATE PLANE COORDINATES, SOUTH CENTRAL ZONE.

(#1) TXDOT ALUMINUM MONUMENT LOCATED ON EAST COURT STREET (US 90A) 21.06' FROM THE NORTHWEST CORNER OF LOT 15 (VOL. 719, PG 1217) ELEVATION=523.05

(#2) A FOUND ½" REBAR WITH CAP "BA." ELEVATION=522.78'

(#3) SANIATRY SEWER MANHOLE LOCATED 350' SOUTH OF COUNTRY LANE ON COUNTRYSIDE DRIVE. ELEVATION=531.26'

(#4) SANITARY SEWER MANHOLE LOCATED WEST ON COUNTRYSIDE ESTATES LOT 7 (VOL.5, PG 293B M.R). ELEVATION=533.10'

REV	DESCRIPTION	BY	DATE

GENERAL NOTES

STATE OF TEXAS
LUIS A. CUELLAR
89656
REGISTERED
PROFESSIONAL ENGINEER

08/01/2014

CITY OF SEGUIN
123 BYPASS WATER LOOP

Klotz Project No 0131.001.001

Drawn By BAL	Checked By LAC
Scale	Date AUGUST 2014
DWG No C1.0	Sheet 1 Of 18

T:\0131.001.001\07.00 CADD\02–Construction Drawings\0131.001 C1.0_Notes.dwg Aug 01 2014

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
100	MOBILIZATION	LS	1
101	PREPARING RIGHT-OF-WAY	LS	1
413	FLOWABLE FILL	CY	10
511	STREET REPAIR (WATERLINE TRENCH)	LF	2,458
530	BARRICADES, SIGNS & TRAFFIC HANDLING	LS	1
540	PREPARATION AND MAINTENANCE OF SW3P	LS	1
550	TRENCH EXCAVATION PROTECTION	LF	3,940
813	SERVICE FOR 6" FIRELINES	LF	50
818	6" WATERLINE, PVC C-900	LF	145
818	8" WATERLINE, PVC C-900	LF	145
818	12" WATERLINE, PVC C-900	LF	3,700
824	RELAY 2" SERVICE (SHORT AND LONG)	EA	3
824	NEW UNMETERED 2" SERVICE (SHORT AND LONG)	EA	1
828	6" GATE VALVES	EA	3
828	8" GATE VALVES	EA	7
828	12" GATE VALVES	EA	9
831	8"X8" CUT-IN TEE	EA	1
831	12"X8" CUT-IN TEE	EA	1
833	METER BOX	EA	1
833	EXISTING METER AND NEW METER BOX LOCATION	EA	3
834	FIRE HYDRANTS, COMPLETE	EA	4
836	PIPE FITTINGS, ALL SIZES AND TYPES	TON	5.5
840	6" WAER TIE-IN	EA	3
840	8" WATER TIE-IN	EA	3
840	12" WATER TIE-IN	EA	1
841	HYDROSTATIC TESTING OPERATIONS	LS	1
844	2" BLOW OFF, TEMPORARY	EA	5
846	2" AIR RELEASE ASSEMBLIES	EA	1
856	JACKING, BORING, OR TUNNELING 24" PIPE	LF	50
856	CARRIER PIPE - 12" PVC C-900	LF	50
856	CASING OR LINER - 24" STEEL PIPE	LF	50
3000	REMOVAL, TRANSPORTATION, AND DISPOSAL OF AC PIPE	LS	1
3000	ASBESTOS ABATEMENT WORK PLAN	LS	1

THE CITY OF
Seguin
TEXAS

BS 123
12" WATER MAIN LOOP
PHASE II & III

FROM HWY 90A AT PRESTON SOUTH TO FM 466 (EASTWOOD DR) EAST AND SOUTH TO COUNTRY SIDE BOULEVARD.

CITY OF SEGUIN, TEXAS

klotz associates
7550 IH-10 West
Northwest Center, Suite 300
San Antonio, TX 78229
Phone: (210) 736-0425
Fax: (210) 736-0405
sanantonio.office@klotz.com
Texas PE Firm Reg. #F-929

SURVEY BENCHMARK:

BEARING BASED ON NAVD 1988 – TEXAS STATE PLANE COORDINATES, SOUTH CENTRAL ZONE.

#1) TXDOT ALUMINUM MONUMENT LOCATED ON EAST COURT STREET (US 90A) 21.06' FROM THE NORTHWEST CORNER OF LOT 15 (VOL. 719, PG 1217) ELEVATION=523.05

#2) A FOUND ½" REBAR WITH CAP "BA." ELEVATION=522.78'

#3) SANIATRY SEWER MANHOLE LOCATED 350' SOUTH OF COUNTRY LANE ON COUNTRYSIDE DRIVE. ELEVATION=531.26'

#4) SANITARY SEWER MANHOLE LOCATED WEST ON COUNTRYSIDE ESTATES LOT 7 (VOL.5, PG 293B M.R). ELEVATION=533.10'

REV	DESCRIPTION	BY	DATE

12" WATER MAIN
QUANTITIES

STATE OF TEXAS
LUIS A. CUELLAR
89656
REGISTERED
PROFESSIONAL ENGINEER

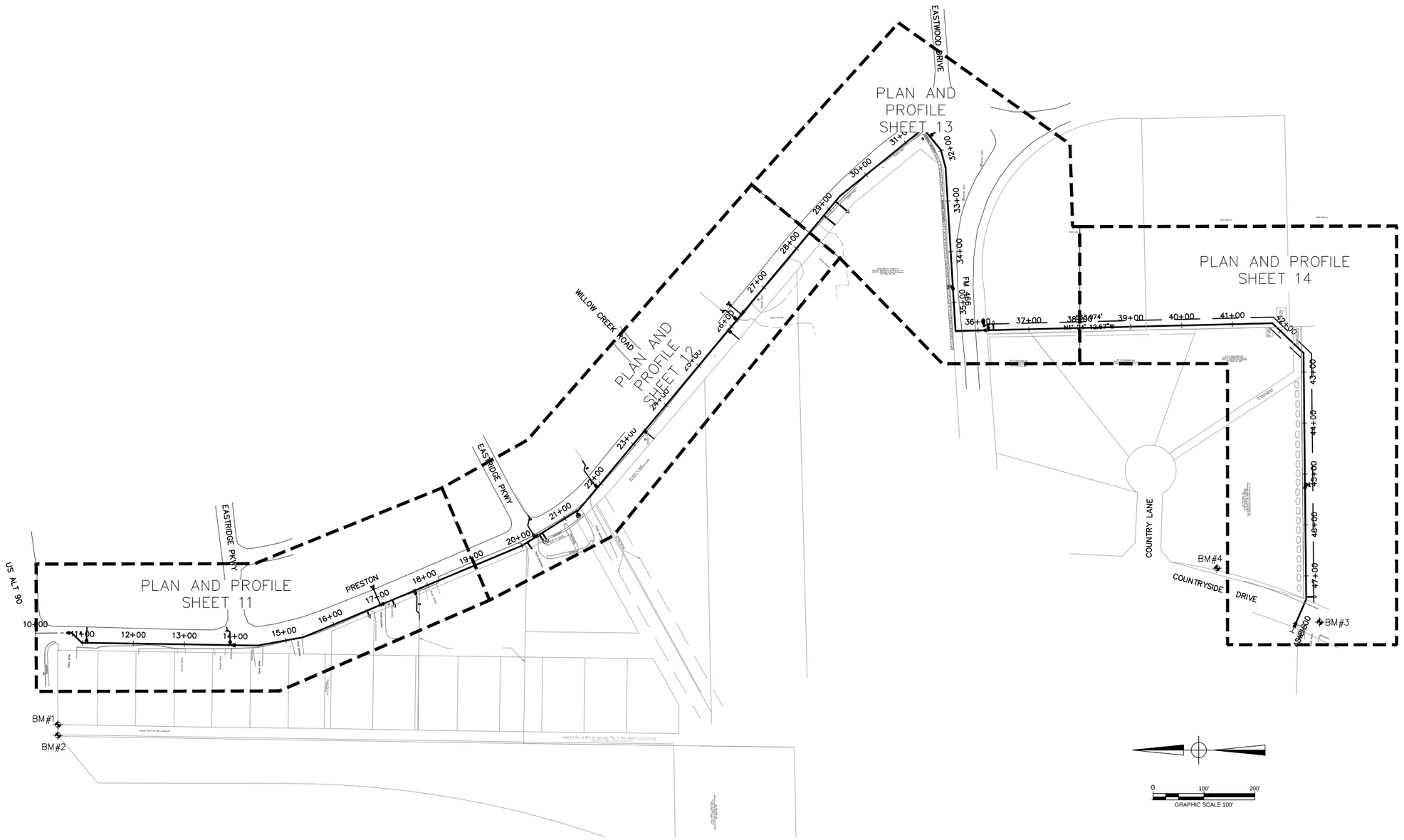
08/01/2014

CITY OF SEGUIN
123 BYPASS WATER LOOP

Klotz Project No 0131.001.001

Drawn By BAL	Checked By LAC
Scale	Date AUGUST 2014
DWG No C2.0	Sheet 2 Of 18

T:\0131.001.001\07.00 CADD\02-Construction Drawings\0131.001 C2.0_Quantity Sheet.dwg Aug 01 2014



UTILITY NOTES

CALL THE TEXAS WIDE STATE ONE CALL LOCATOR AT 1-800-344-8377. 48 HOURS BEFORE ANY CONSTRUCTION.

DUE TO FEDERAL REGULATION TITLE 49, PART 192.181, CENTERPOINT ENERGY MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR/ FOREMAN MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING OVERHEAD AND UNDERGROUND ELECTRIC FACILITIES IF ADJACENT TO WORK AREA.

THE EXISTENCE AND LOCATION OF UNDERGROUND CABLE INDICATED ON THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR/FOREMAN IS RESPONSIBLE FOR MAINTAINING AND PROTECTING THE INTEGRITY OF POWER POLES AND UNDERGROUND ELECTRIC CABLES DURING (NSPI) CONSTRUCTION. 48 HOURS BEFORE BEGINNING ANY EXCAVATION CALL THE TEXAS WIDE STATE ONE CALL LOCATOR AT 1-800-344-8377. CONTRACTOR TO PROTECT AND SUPPORT TELEPHONE COMPANY PLANT DURING CONTRUCTION.

TRENCH EXCAVATION SAFTEY PROTECTION

TRENCH EXCAVATION PROTECTION SHALL BE ACCOMPLISHED AS REQUIRED BY THE PROVISIONS OF PART 1926, SUBPART P-EXCAVATION, TRENCHING, AND SHORING OF THE OCCUPATIONAL SAFETY AND HEALTH'S STANDARDS AND INTERPRETATIONS. THE CONTRACTOR/FOREMAN SHALL ALSO COMPLY WITH 550, TRENCH EXCAVATION PROTECTION, SAN ANTONIO WATER SYSTEM SPECIFICATIONS FOR WATER CONSTRUCTION.

THE CITY OF
Seguin
TEXAS

BS 123
12" WATER MAIN LOOP
PHASE II & III

FROM HWY 90A AT PRESTON SOUTH TO FM 466 (EASTWOOD DR) EAST AND SOUTH TO COUNTRY SIDE BOULEVARD.

CITY OF SEGUIN, TEXAS

klotz associates
7550 IH-10 West
Northwest Center, Suite 300
San Antonio, TX 78229
Phone: (210) 736-0425
Fax: (210) 736-0405
sanantonio.office@klotz.com
Texas PE Firm Reg. #F-929

SURVEY BENCHMARK:

BEARING BASED ON NAVD 1988 - TEXAS STATE PLANE COORDINATES, SOUTH CENTRAL ZONE.

#1) TXDOT ALUMINUM MONUMENT LOCATED ON EAST COURT STREET (US 90A) 21.06' FROM THE NORTHWEST CORNER OF LOT 15 (VOL. 719, PG 1217) ELEVATION=523.05

#2) A FOUND ½" REBAR WITH CAP "BA." ELEVATION=522.78'

#3) SANIATRY SEWER MANHOLE LOCATED 350' SOUTH OF COUNTRY LANE ON COUNTRYSIDE DRIVE. ELEVATION=531.26'

#4) SANITARY SEWER MANHOLE LOCATED WEST ON COUNTRYSIDE ESTATES LOT 7 (VOL.5, PG 293B M.R). ELEVATION=533.10'

REV	DESCRIPTION	BY	DATE

OVERALL PROJECT LAYOUT

STATE OF TEXAS
LUIS A. CUELLAR
89656
REGISTERED PROFESSIONAL ENGINEER

08/01/2014

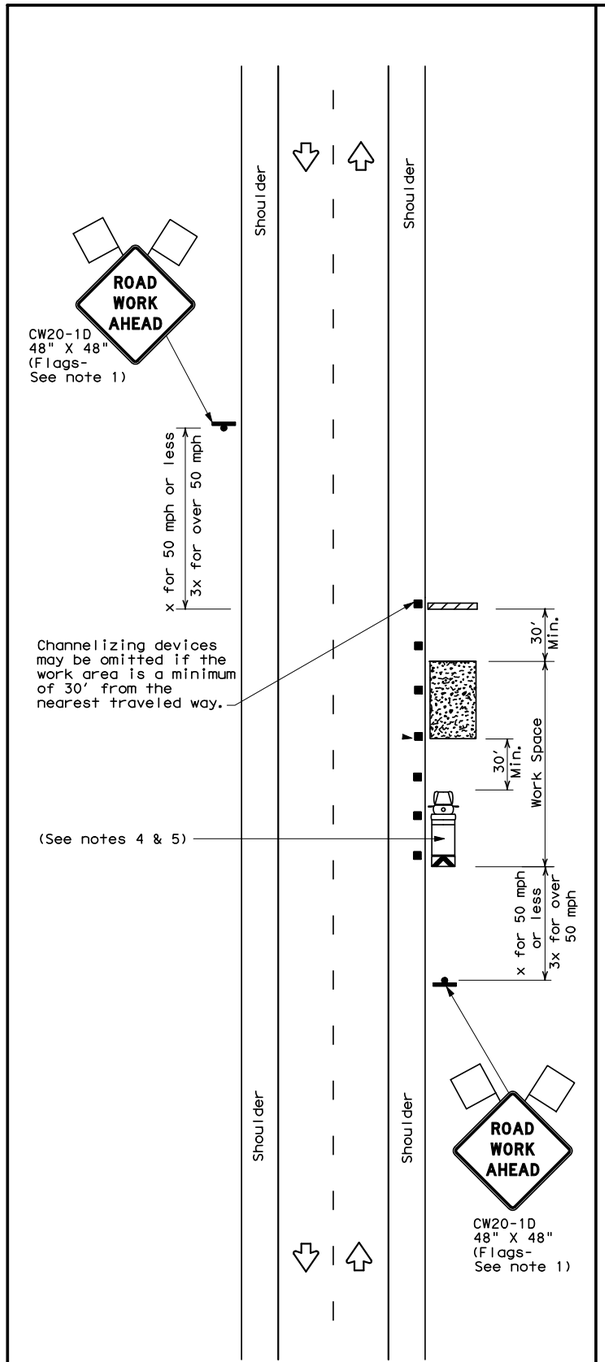
CITY OF SEGUIN
123 BYPASS WATER LOOP

Klotz Project No 0131.001.001

Drawn By BAL	Checked By LAC
Scale	Date AUGUST 2014
DWG No C3.0	Sheet 3 Of 18

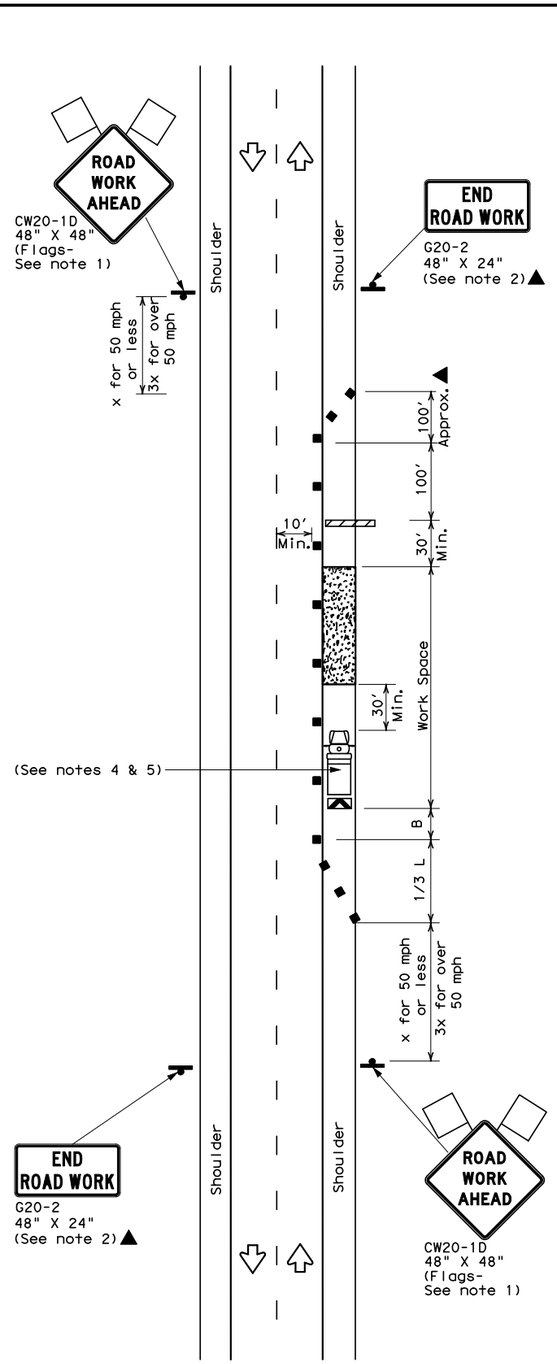
T:\0131.001.001\07.00 CADD\02-Construction Drawings\0131.001 C3.0_PRJ Layout.dwg Aug 01 2014

DATE:
FILE:



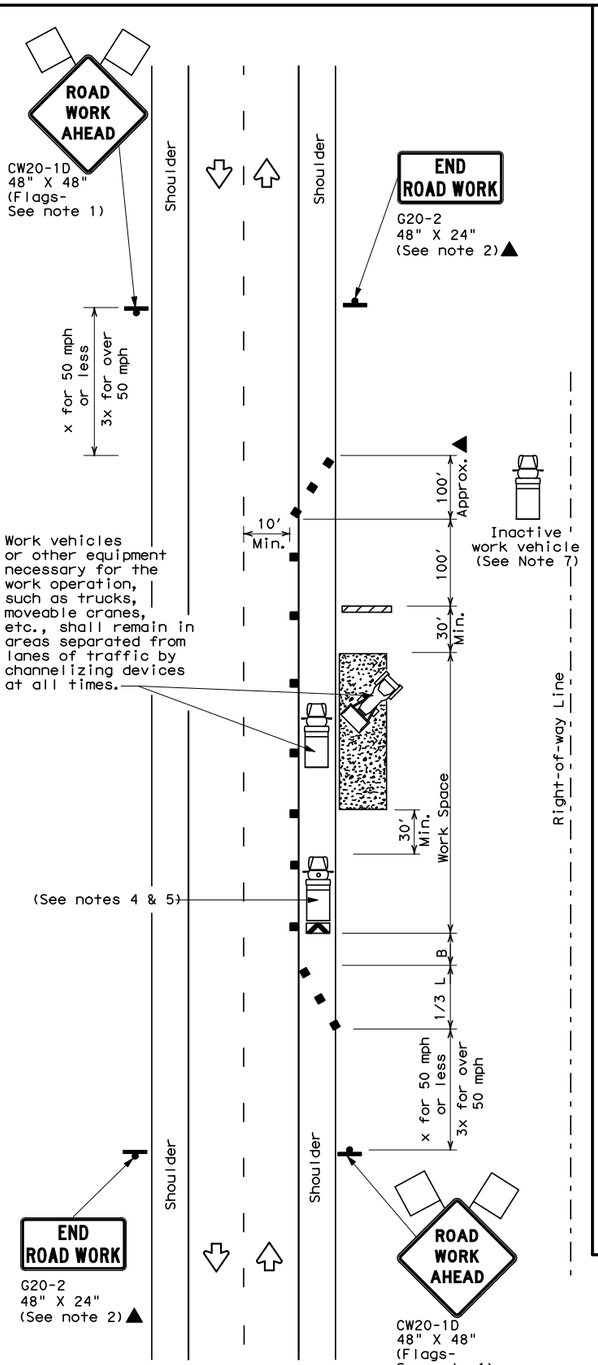
TCP (2-1a)

WORK SPACE NEAR SHOULDER
Conventional Roads



TCP (2-1b)

WORK SPACE ON SHOULDER
Conventional Roads



TCP (2-1c)

WORK VEHICLES ON SHOULDER
Conventional Roads

LEGEND			
	Type 3 Barricade	■ ■	Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board	(M)	Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices: On a Taper	On a Tangent	Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
30	$L=\frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L=WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

* Conventional Roads Only

** Taper lengths have been rounded off.
L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓	✓	✓

GENERAL NOTES

1. Flags attached to signs where shown, are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated in the plans, or for routine maintenance work, when approved by the Engineer.
3. Stockpiled material should be placed a minimum of 30 feet from nearest traveled way.
4. Shadow Vehicle with TMA and high intensity rotating, flashing, oscillating or strobe lights. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
5. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.
6. See TCP(5-1) for shoulder work on divided highways, expressways and freeways.
7. Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
8. CW21-5 "SHOULDER WORK" signs may be used in place of CW21-1D "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.

For construction or maintenance contract work, specific project requirements for shadow vehicles can be found in the project GENERAL NOTES for Item 502, Barricades, Signs and Traffic Handling.

Texas Department of Transportation
Traffic Operations Division

TRAFFIC CONTROL PLAN CONVENTIONAL ROAD SHOULDER WORK

TCP(2-1)-12

DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT

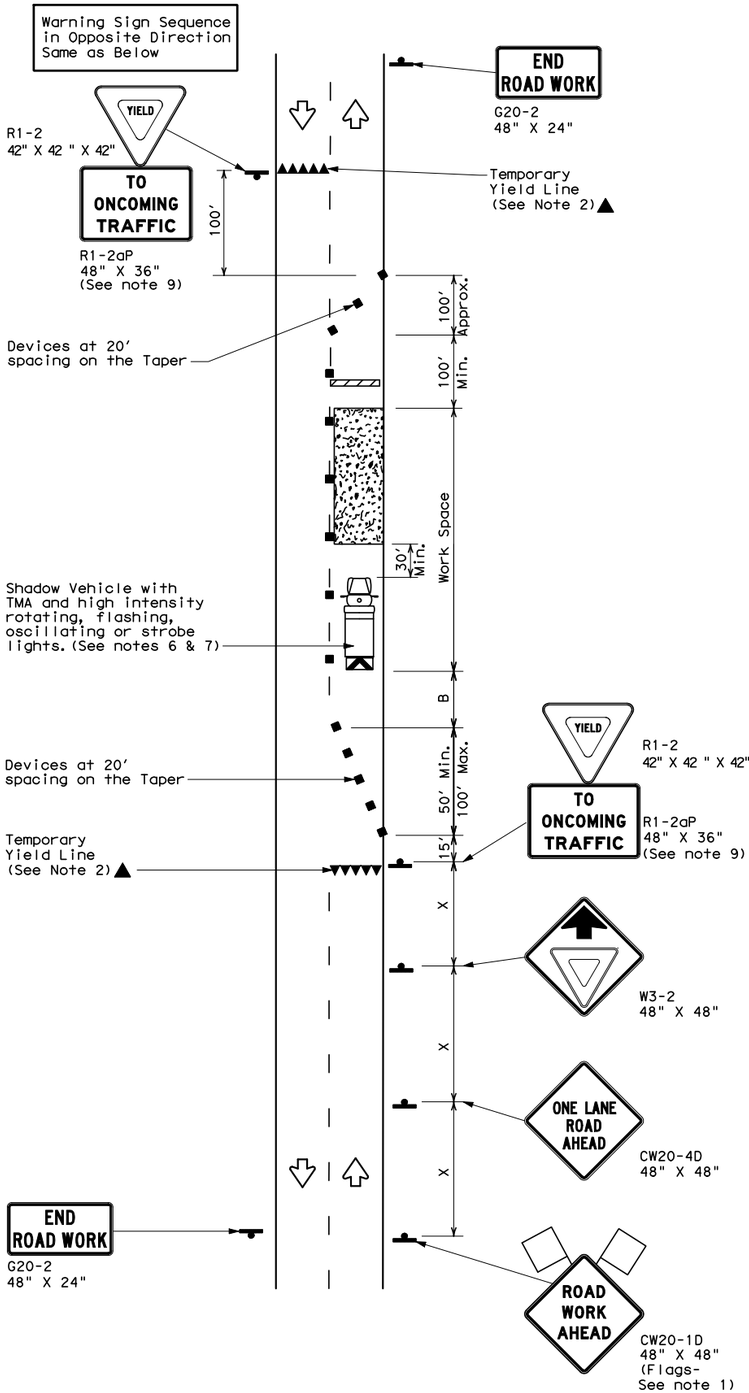
REVISIONS
2-94 2-12
8-95
1-97
4-98

CONT	SECT	JOB	HIGHWAY

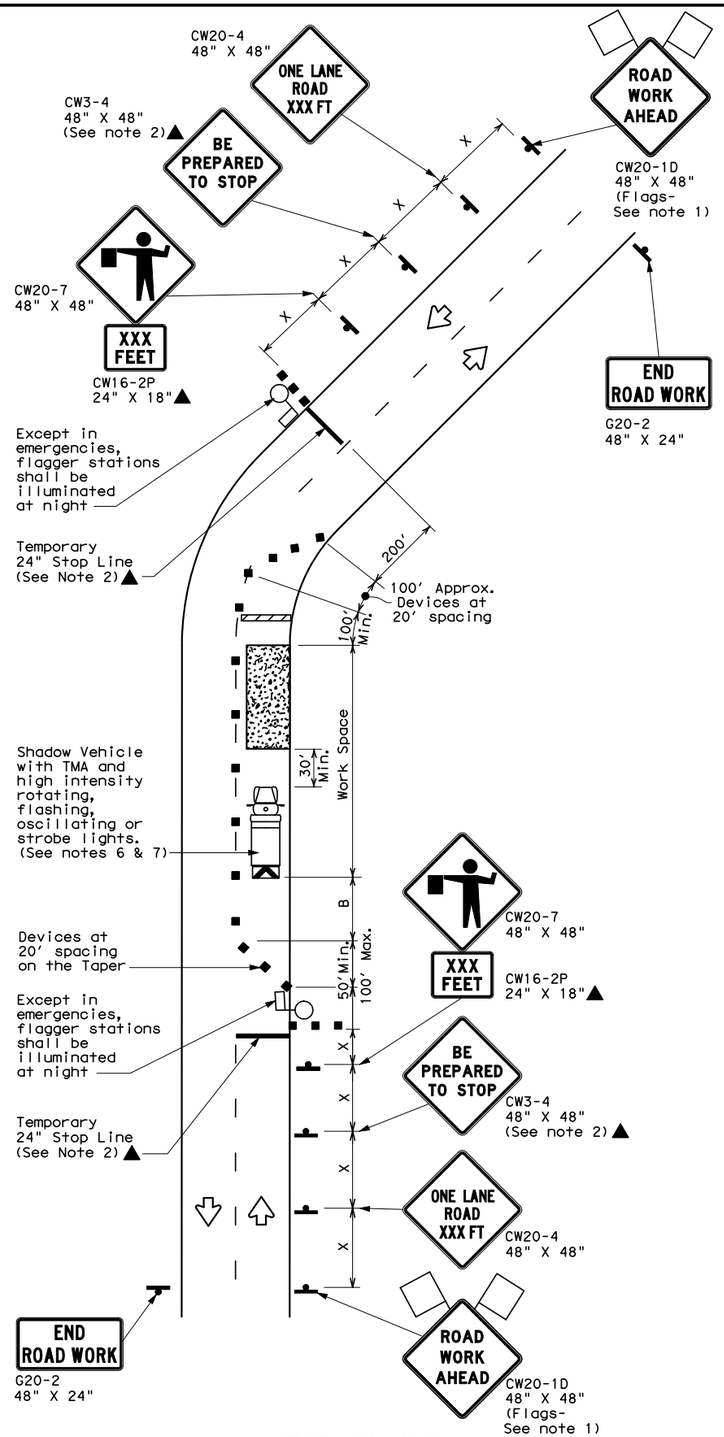
DIST	COUNTY	SHEET NO.
		C4.0

161

DATE:
FILE:



TCP (2-2a)
2-LANE ROADWAY WITHOUT PAVED SHOULDERS
ONE LANE TWO-WAY
CONTROL WITH YIELD SIGNS
(Less than 2000 ADT - See Note 9)



TCP (2-2b)
2-LANE ROADWAY WITHOUT PAVED SHOULDERS
ONE LANE TWO-WAY
CONTROL WITH FLAGGERS

LEGEND			
	Type 3 Barricade	■ ■	Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board	M	Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices: On a Taper	On a Tangent	Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"	Stopping Sight Distance
30	$L=\frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'	200'
35		205'	225'	245'	35'	70'	160'	120'	250'
40		265'	295'	320'	40'	80'	240'	155'	305'
45	L=WS	450'	495'	540'	45'	90'	320'	195'	360'
50		500'	550'	600'	50'	100'	400'	240'	425'
55		550'	605'	660'	55'	110'	500'	295'	495'
60		600'	660'	720'	60'	120'	600'	350'	570'
65		650'	715'	780'	65'	130'	700'	410'	645'
70		700'	770'	840'	70'	140'	800'	475'	730'
75		750'	825'	900'	75'	150'	900'	540'	820'

* Conventional Roads Only
** Taper lengths have been rounded off.
L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓	✓	

GENERAL NOTES

1. Flags attached to signs where shown, are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. The CW3-4 "BE PREPARED TO STOP" sign may be installed after the CW20-4 "ONE LANE ROAD XXX FT" sign, but proper sign spacing shall be maintained.
4. Flaggers should use two-way radios or other methods of communication to control traffic.
5. Length of work space should be based on the ability of flaggers to communicate.
6. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
7. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.

TCP (2-2a)

8. The R1-2 "YIELD" sign traffic control may be used on projects with approaches that have adequate sight distance. For projects in urban areas, work space should be no longer than one half city block. In rural areas, roadways with less than 2000 ADT, work space should be no longer than 400 feet.
9. The R1-2aP "YIELD TO ONCOMING TRAFFIC" sign shall be placed on a support at a 7 foot minimum mounting height.

TCP (2-2b)

10. Channelizing devices on the center line may be omitted when a pilot car is leading traffic and approved by the Engineer.
11. If the work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain stopping sight distance to the flagger and a queue of stopped vehicles. (See table above).
12. Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situtations.

For construction or maintenance contract work, specific project requirements for shadow vehicles can be found in the project GENERAL NOTES for Item 502, Barricades, Signs and Traffic Handling.

Texas Department of Transportation
Traffic Operations Division

TRAFFIC CONTROL PLAN ONE-LANE TWO-WAY TRAFFIC CONTROL

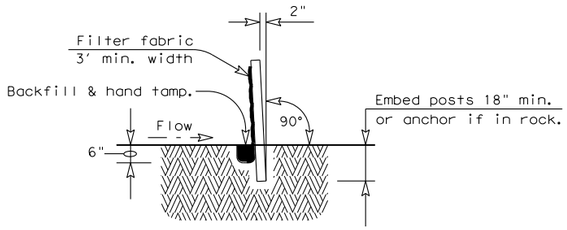
TCP(2-2)-12

DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT

REVISIONS	CONT	SECT	JOB	HIGHWAY
8-95 2-12				
1-97				
4-98	DIST	COUNTY		SHEET NO.
3-03				C5.0

162

DATE:
FILE:



SECTION A-A

GENERAL NOTES

1. The guidelines shown hereon are suggestions only and may be modified by the Engineer.

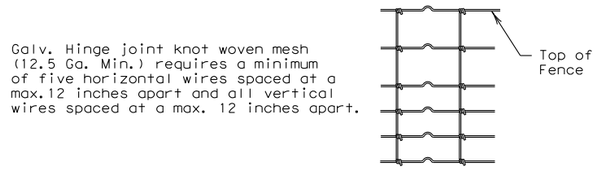
PLAN SHEET LEGEND

Sediment Control Fence —— SCF ——

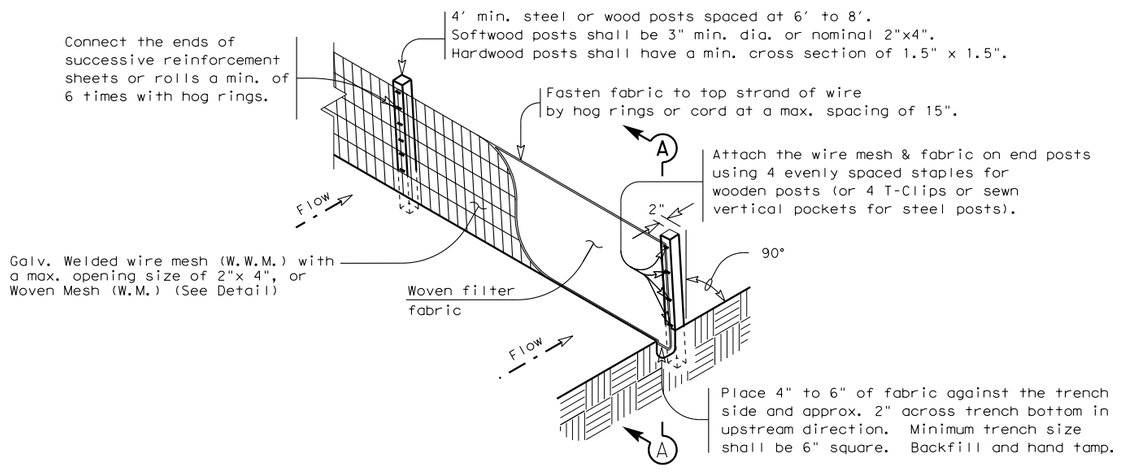
SEDIMENT CONTROL FENCE USAGE GUIDELINES

A sediment control fence may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A 2 year storm frequency may be used to calculate the flow rate to be filtered.

Sediment control fence should be sized to filter a max. flow through rate of 100 GPM/FT^2. Sediment control fence is not recommended to control erosion from a drainage area larger than 2 acres.

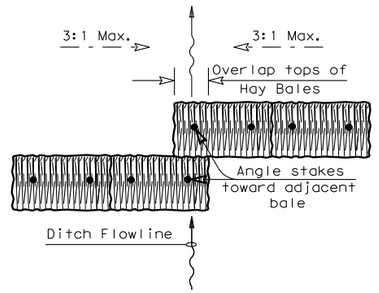


Hinge Joint Knot Woven Mesh (Option)

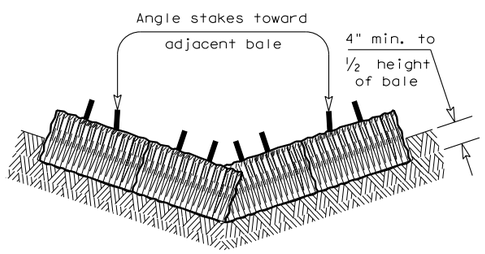


TEMPORARY SEDIMENT CONTROL FENCE

SCF



PLAN VIEW



PROFILE VIEW

PLANS SHEET LEGEND

Baled Hay —— BH ——

BALED HAY USAGE GUIDELINES

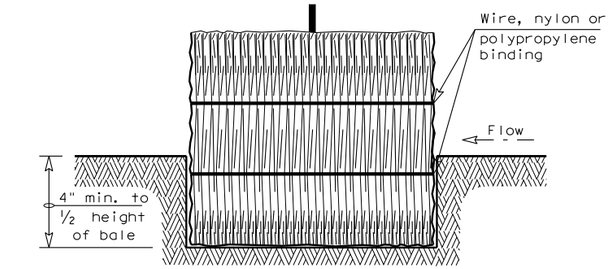
A Baled Hay installation may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A two year storm frequency may be used to calculate the flow rate to be filtered. The installation should be sized to filter a maximum flow thru rate of 5 GPM/FT^2 of cross sectional area. Baled hay may be used at the following locations:

1. Where the runoff approaching the baled hay flows over disturbed soil for less than 100'. If the slope of the disturbed soil exceeds 10%, the length of slope upstream the baled hay should be less than 50'.
2. Where the installation will be required for less than 3 months.
3. Where the contributing drainage area is less than ½ acre.

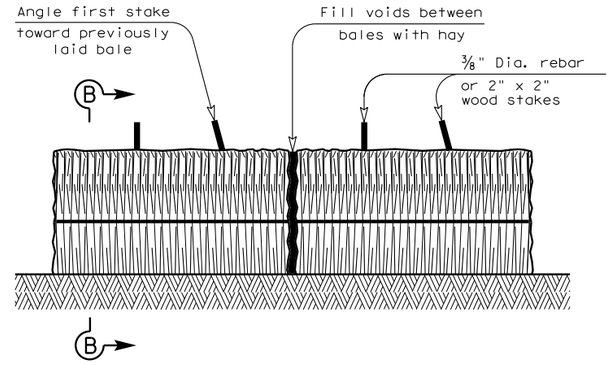
For Baled Hay installations in small ditches, the additional following considerations apply:

1. The ditch sideslopes should be graded as flat as possible to maximize the drainage flowrate thru the hay.
2. The ditch should be graded large enough to contain the overtopping drainage when sediment has filled to the top of the baled hay.

Bales should be replaced usually every 2 months or more often during wet weather when loss of structural integrity is accelerated.



SECTION B-B



BALED HAY FOR EROSION CONTROL

BH

GENERAL NOTES

1. Hay bales shall be a minimum of 30" in length and weigh a minimum of 50 Lbs.
2. Hay bales shall be bound by either wire or nylon or polypropylene string. The bales shall be composed entirely of vegetative matter.
3. Hay bales shall be embedded in the soil a minimum of 4" and where possible ½ the height of the bale.
4. Hay bales shall be placed in a row with ends tightly abutting the adjacent bales. The bales shall be placed with bindings parallel to the ground.
5. Hay bales shall be securely anchored in place with ⅜" Dia. rebar or 2" x 2" wood stakes, driven through the bales. The first stake shall be angled towards the previously laid bale to force the bales together.
6. The guidelines shown hereon are suggestions only and may be modified by the Engineer.

Texas Department of Transportation | Design Division Standard

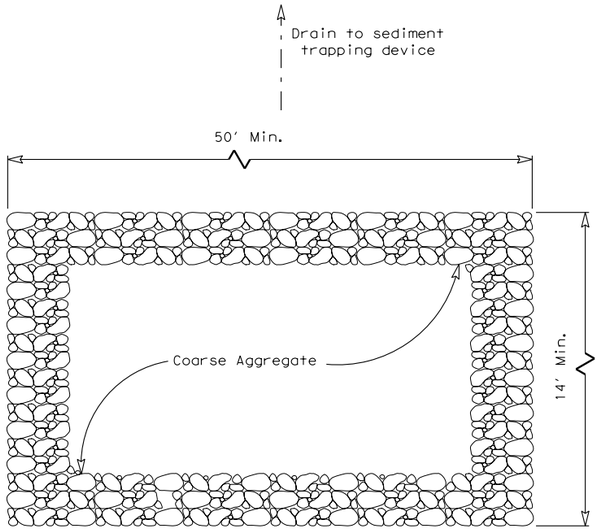
TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

FENCE & BALED HAY

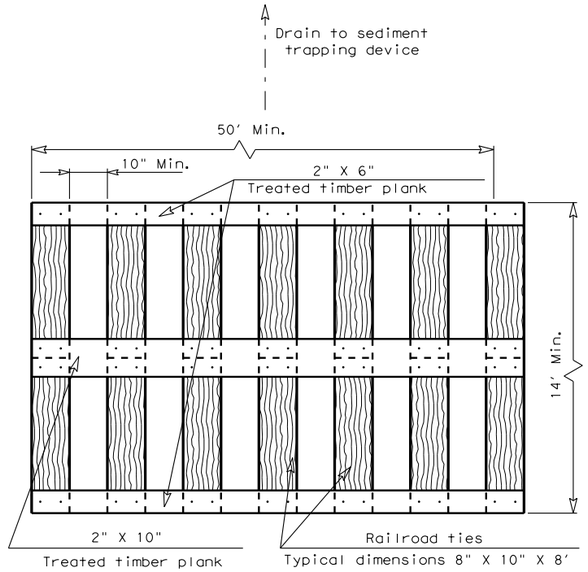
EC(1)-09

FILE: ec109.dgn	DN: TxDOT	CK: AM	DW: TV	CK: BD
©TxDOT June 1993	CONT	SECT	JOB	HIGHWAY
REVISIONS				
	DIST	COUNTY		SHEET NO.
				C6.0

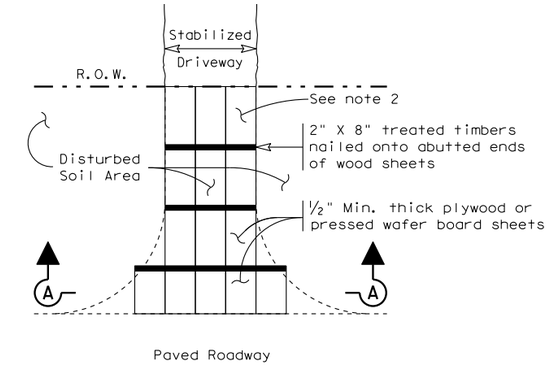
DATE:
FILE:



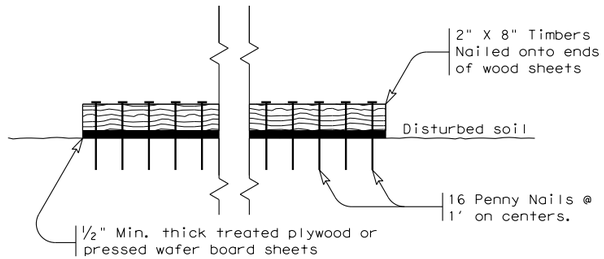
PLAN



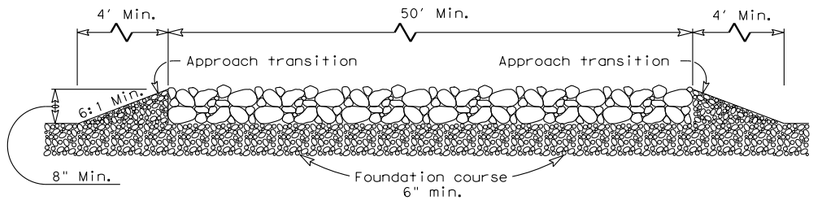
PLAN



PLAN



SECTION A-A

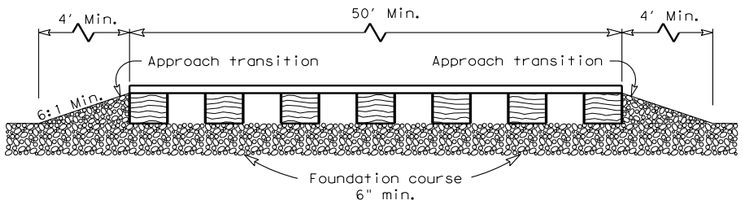


PROFILE

CONSTRUCTION EXIT (TYPE 1)

GENERAL NOTES

1. The length of the type 1 construction exit shall be as indicated on the plans, but not less than 50′.
2. The coarse aggregate should be open graded with a size of 4" to 8".
3. The approach transitions should be no steeper than 6:1 and constructed as directed by the Engineer.
4. The construction exit foundation course shall be flexible base, bituminous concrete, portland cement concrete or other material as approved by the Engineer.
5. The construction exit shall be graded to allow drainage to a sediment trapping device.
6. The guidelines shown hereon are suggestions only and may be modified by the Engineer.



PROFILE

CONSTRUCTION EXIT (TYPE 2)

GENERAL NOTES

1. The length of the type 2 construction exit shall be as indicated on the plans, but not less than 50′.
2. The treated timber planks shall be attached to the railroad ties with ½"x 6" min. lag bolts. Other fasteners may be used as approved by the Engineer.
3. The treated timber planks shall be #2 grade min., and should be free from large and loose knots.
4. The approach transitions shall be no steeper than 6:1 and constructed as directed by the Engineer.
5. The construction exit foundation course shall be flexible base, bituminous concrete, portland cement concrete or other material as approved by the Engineer.
6. The construction exit should be graded to allow drainage to a sediment trapping device.
7. The guidelines shown hereon are suggestions only and may be modified by the Engineer.

CONSTRUCTION EXIT (TYPE 3)

GENERAL NOTES

1. The length of the type 3 construction exit shall be as shown on the plans, or as directed by the Engineer.
2. The type 3 construction exit may be constructed from open graded crushed stone with a size of two to four inches spread a min. of 4" thick to the limits shown on the plans.
3. The treated timber planks shall be #2 grade min., and should be free from large and loose knots.
4. The guidelines shown hereon are suggestions only and may be modified by the Engineer.

Texas Department of Transportation

Design Division Standard

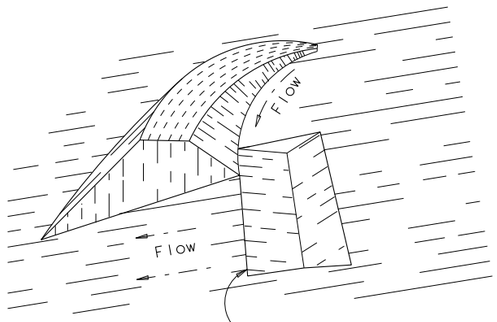
TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

CONSTRUCTION EXITS

EC(3)-93

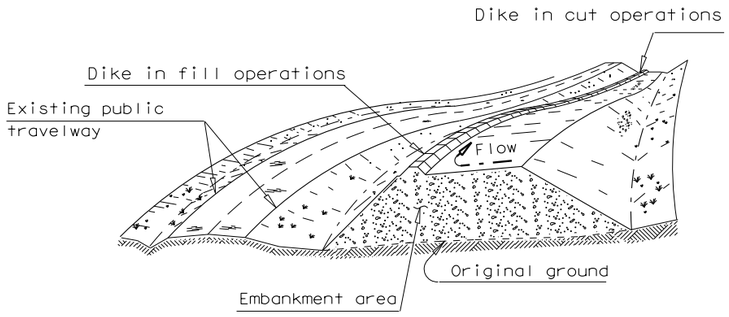
FILE: ec393.dgn	DN: TxDOT	CK: HEJ	DW: BD	CK:
©TxDOT June 1993	CONT	SECT	JOB	HIGHWAY
REVISIONS				
	DIST	COUNTY		SHEET NO.
				C7.0

DATE:
FILE:



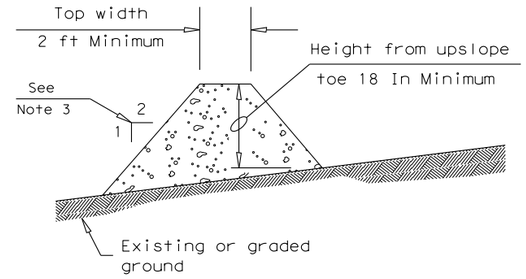
PERIMETER DIKE

Dike —(D)—

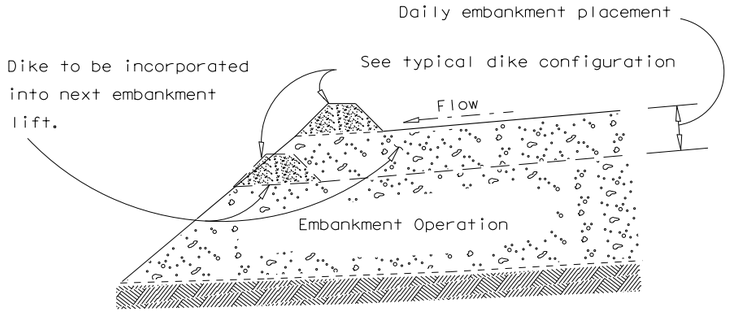


DIVERSION DIKE

Dike —(D)—

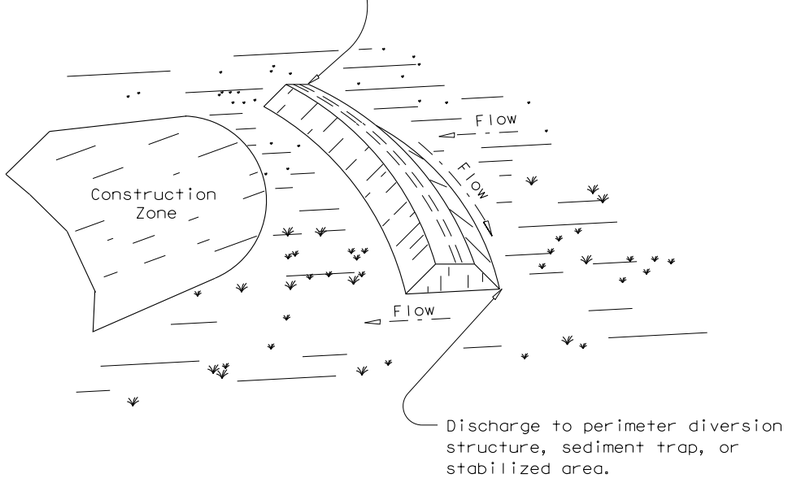


TYPICAL DIKE CONFIGURATION



EMBANKMENT SECTION - DIVERSION DIKE

Dike —(D)—



INTERCEPTOR DIKE

PLANS SHEET LEGEND

Dike —(D)—

GENERAL NOTES:

1. Soil used in dike construction shall be machine compacted.
2. Top width and height of dike may be modified with prior approval of the Engineer.
3. Side slopes within the safety clear zone of a roadway shall be 6:1 or flatter.
4. Grading shall be shown elsewhere in the plans or as directed by the Engineer.
5. The Engineer reserves the right to modify the dimensions shown for the dike dependent on runoff volume characteristics.
6. Dikes that are in place for more than 14 calendar days should be stabilized to prevent sediment runoff.
7. The guidelines shown hereon are suggestions only and may be modified by the Engineer.

DIKE USAGE GUIDELINES

A dike may be used to intercept runoff and divert it around unstabilized areas or to divert sediment laden runoff to an erosion control device (sediment basin or trap, rock filter dam, etc.).

The drainage area contributing runoff to a dike should not exceed 5 acres. The spacing of dikes should be as follows:

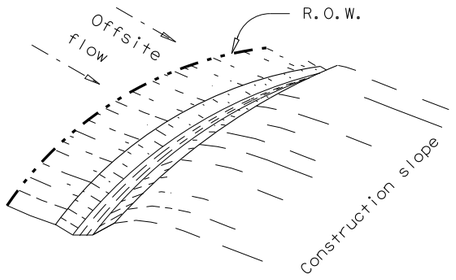
Slope of disturbed areas above dike	greater than 10%	5 - 10%	less than 5%
Maximum distance between dikes	100′	200′	300′

Intercepted runoff flowing along a dike should outlet to a stabilized area (vegetation, rock, etc.).

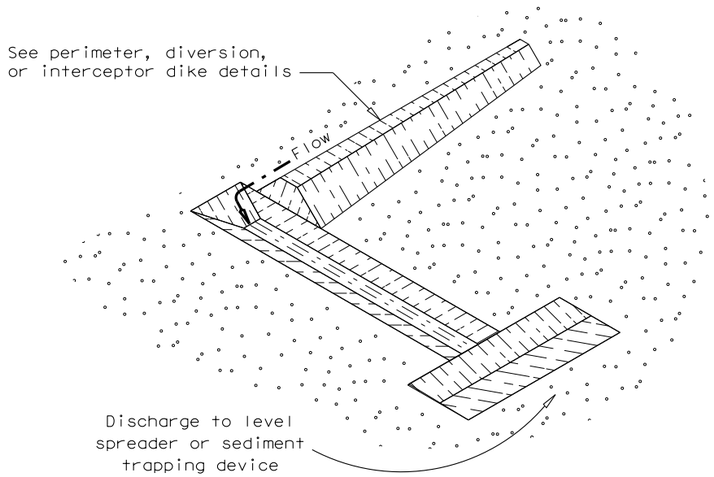
Texas Department of Transportation | Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES
DIKES
(EARTHWORK FOR EROSION CONTROL)
EC(4)-93

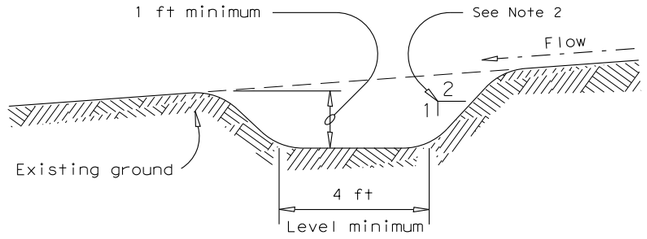
FILE: ec493.dgn	DN: TxDOT	CK: HEJ	DW: BD	CK:
©TxDOT June 1993	CONT	SECT	JOB	HIGHWAY
REVISIONS				
	DIST	COUNTY		SHEET NO.
				C8.0



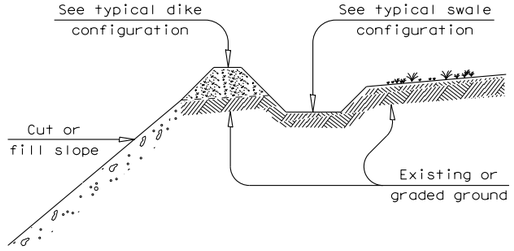
PERIMETER SWALE



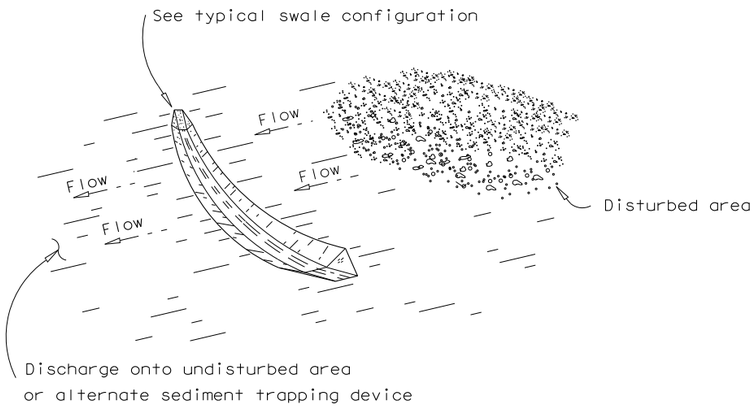
DIVERSION SWALE



TYPICAL SWALE CONFIGURATION



DIVERSION DIKE WITH SWALE



INTERCEPTOR SWALE

PLANS SHEET LEGEND

Swale — S

Dike — D

SWALE AND DIKE/SWALE USAGE GUIDELINES

A swale or dike/swale may be used to intercept runoff and divert it around unstabilized areas or to divert sediment laden runoff to an erosion control device (sediment basin or trap, rock filter dam, etc.).

The drainage area contributing runoff to a swale or dike/swale should not exceed 5 acres. The spacing of swales and dike/swales should be as follows:

Slope of disturbed areas above dike	greater than 10%	5 - 10%	less than 5%
Maximum distance between dikes	100′	200′	300′

Intercepted runoff flowing in a swale or dike/swale should outlet to a stabilized area (vegetation, rock, etc.).

GENERAL NOTES:

1. Dimensions of swale may be modified with prior approval of the Engineer.
2. Side slopes within the safety clear zone of a roadway shall be 6:1 or flatter.
3. Grading shall be shown elsewhere on the plans or as directed by the Engineer.
4. The Engineer reserves the right to modify the dimensions shown for the swale dependent on runoff volume characteristics.
5. Swales that are in place for more than 14 calender days should be stabilized through seeding or other measures to control sediment runoff.
6. The guidelines shown hereon are suggestions only and may be modified by the Engineer.

Texas Department of Transportation

Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

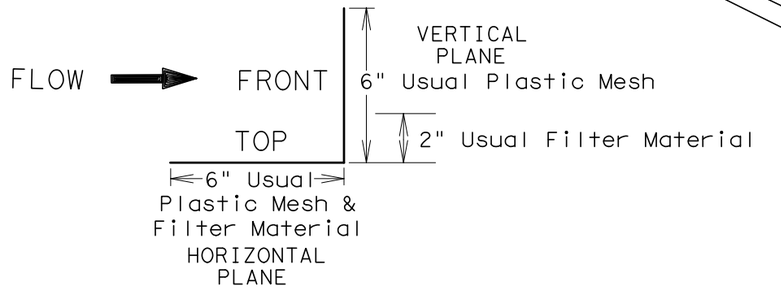
SWALES

(EARTHWORK FOR EROSION CONTROL)

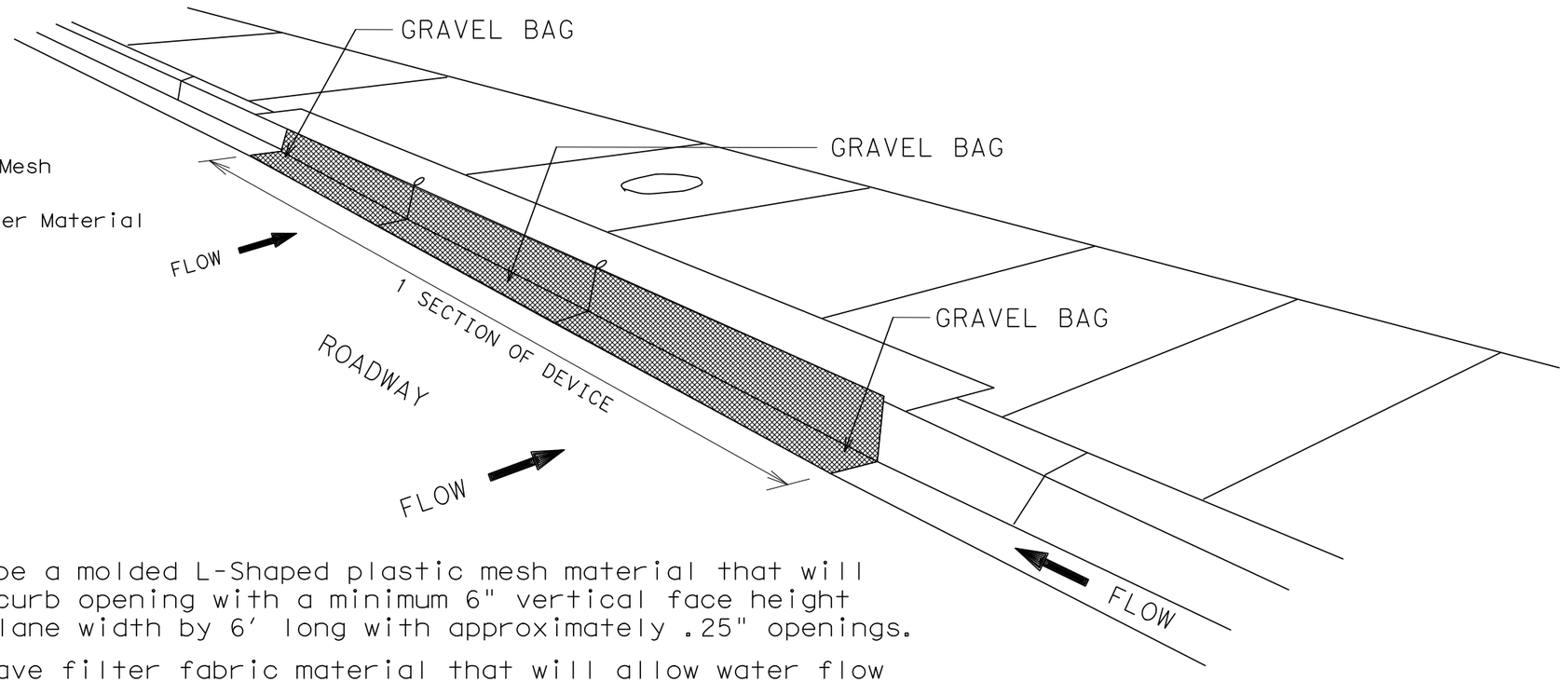
EC(5)-93

FILE: ec593.dgn	DN: TxDOT	CK: HEJ	DW: BD	CK:
© TxDOT May 1993	CONT	SECT	JOB	HIGHWAY
REVISIONS				
	DIST	COUNTY		SHEET NO.
				C9.0

DATE:
FILE:



PLASTIC MESH L-SHAPE
CROSS SECTION



NOTES:

1. The device shall be a molded L-Shaped plastic mesh material that will cover the entire curb opening with a minimum 6" vertical face height by 6" horizonal plane width by 6' long with approximately .25" openings.
2. The device must have filter fabric material that will allow water flow but stop sediment. It will extend from bottom up vertical plane a minimum of 2" and full width of horizontal bottom plane. The filter fabric shall be attached to the back of the plastic mesh. It shall not cover more than 1/3 of the height of the vertical plane opening to allow overflow in larger strom events to prevent flooding of travel lanes.

Filter Fabric Physical Requirements Table

Apparent Opening Size (AOS)	400 to 600 microns
Percent Open Area (POA)	>10%
Flow Rate	130 gallons per SF per minute with clean water or greater.

3. Place with horizontal plane pointing away from curb.
4. For high openings, the device or attachment should extend above opening.
5. For long curb openings, overlap the segments 6". Tie together with 4 zip ties in 4 places, 2 at the top and 2 at the bottom.
6. Install gravel, not sand, bags at each end, at overlaps and in the middle of each section. Use 1/3 full bags for low profile and best traffic avoidance.
7. Use bags that will have long-term resistance to UV exposure.
8. Sediment should be removed and device cleaned when sediment reaches 1" in depth.

REVISED ON 9/10/08

DALLAS DISTRICT STANDARD

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

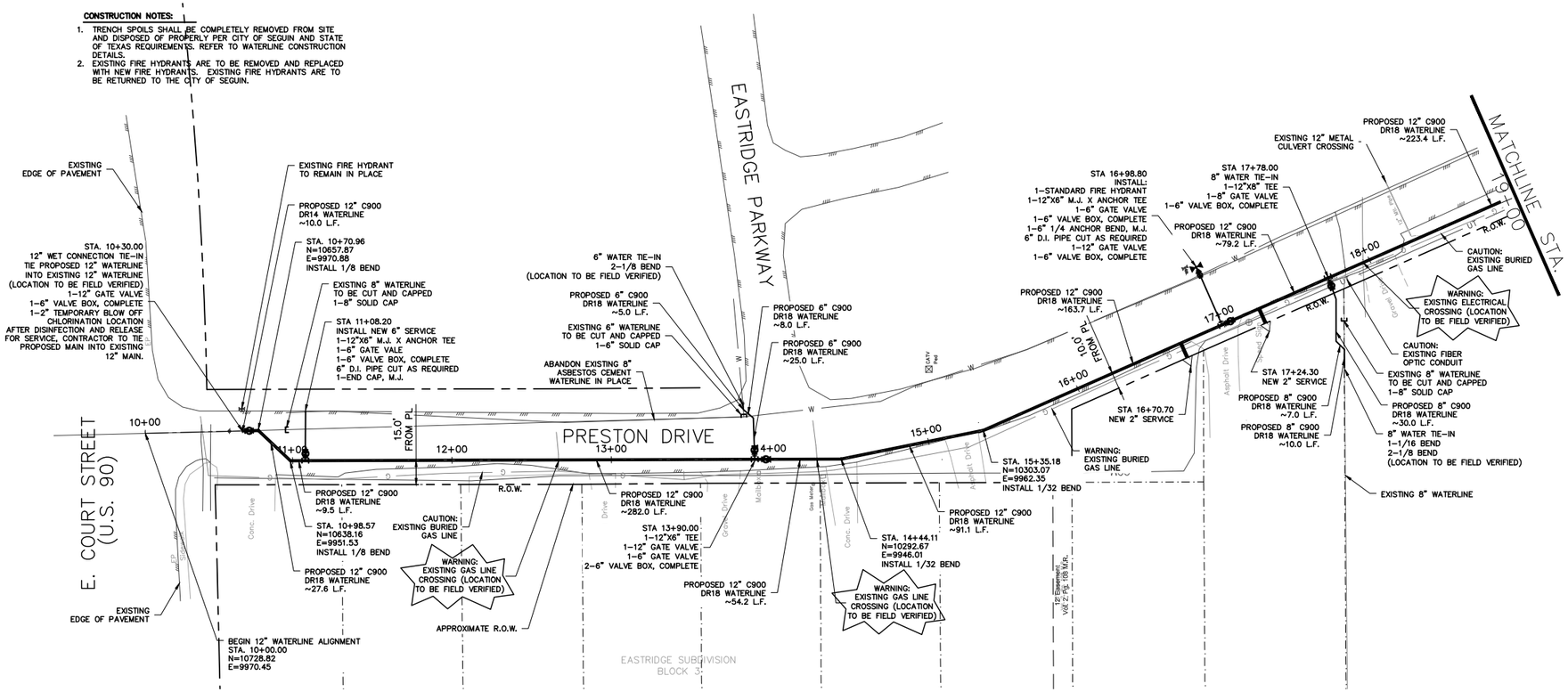
CURB INLET SEDIMENT PROTECTION

FED. RD. DIV. NO.	PROJECT NUMBER		SHEET NUMBER
18			C10.0
STATE	DISTRICT	COUNTY	
TEXAS	DALLAS	DALLAS	
CONTROL	SECTION	SECTION	HIGHWAY NUMBER
0000	00	000	IH/SH/FM

FILENAME: $FILE$

CONSTRUCTION NOTES:

1. TRENCH SPOILS SHALL BE COMPLETELY REMOVED FROM SITE AND DISPOSED OF PROPERLY PER CITY OF SEGUIN AND STATE OF TEXAS REQUIREMENTS. REFER TO WATERLINE CONSTRUCTION DETAILS.
2. EXISTING FIRE HYDRANTS ARE TO BE REMOVED AND REPLACED WITH NEW FIRE HYDRANTS. EXISTING FIRE HYDRANTS ARE TO BE RETURNED TO THE CITY OF SEGUIN.



LEGEND

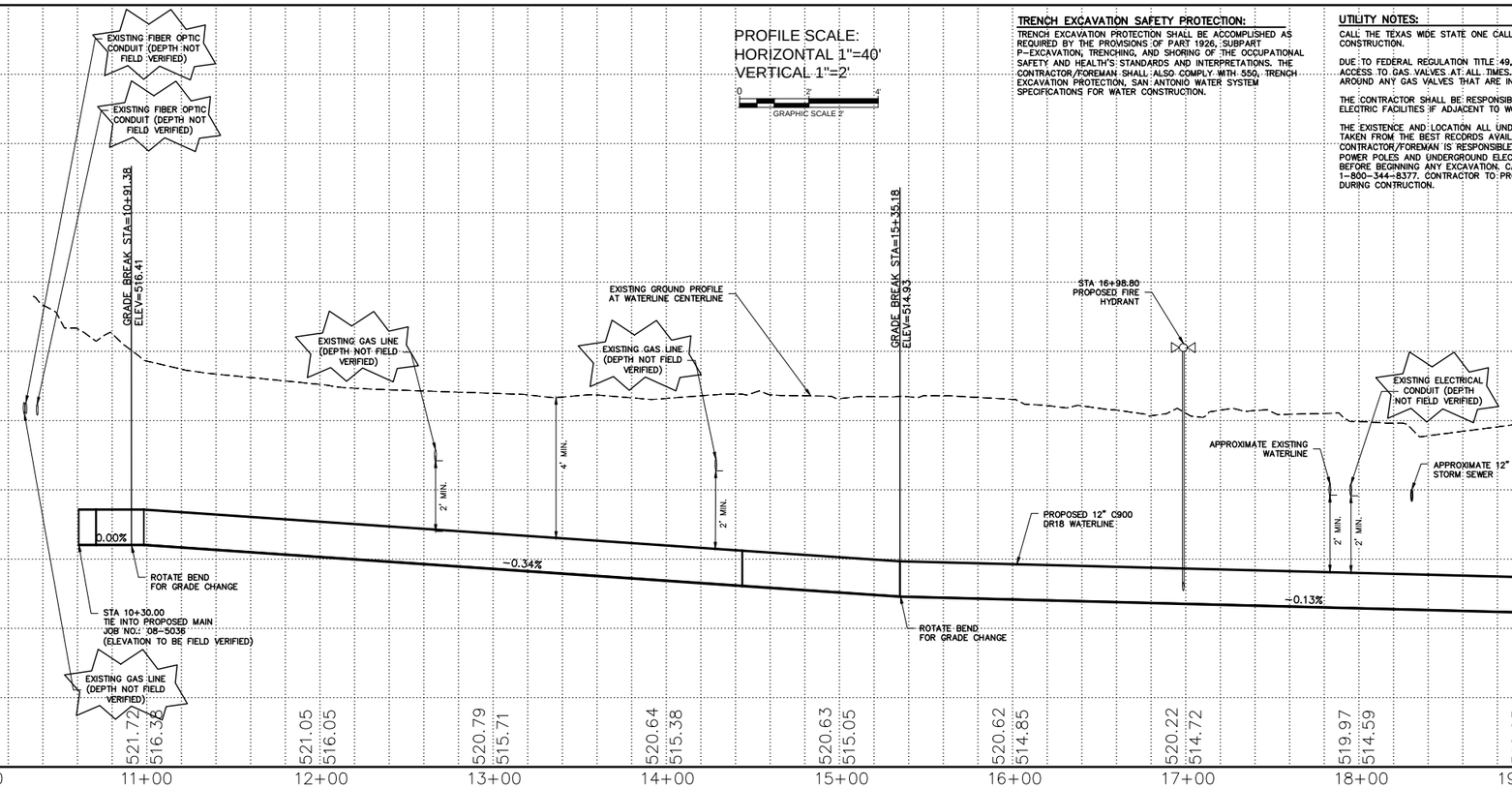
- PROP. WATER MAIN
- PROP. WATER VALVE
- PROP. AIR VALVE
- EXIST. WATER MAIN
- GAS MAIN
- SANITARY SEWER
- STORM SEWER
- UTILITY POLE LINE
- ELECTRIC CABLE
- TELEPHONE CABLE
- EXIST. METER LOCATION
- SERVICE RELAY:
- RELOCATE METER
- RIGHT-OF-WAY
- EXISTING EDGE OF PAVEMENT

PLAN SCALE:
HORIZONTAL 1"=40'

0 40' 80'
GRAPHIC SCALE 40'

PROFILE SCALE:
HORIZONTAL 1"=40'
VERTICAL 1"=2'

0 2' 4'
GRAPHIC SCALE 2'



TRENCH EXCAVATION SAFETY PROTECTION:

TRENCH EXCAVATION PROTECTION SHALL BE ACCOMPLISHED AS REQUIRED BY THE PROVISIONS OF PART 1926, SUBPART P—EXCAVATION, TRENCHING, AND SHORING OF THE OCCUPATIONAL SAFETY AND HEALTH'S STANDARDS AND INTERPRETATIONS. THE CONTRACTOR/FOREMAN SHALL ALSO COMPLY WITH 550, TRENCH EXCAVATION PROTECTION, SAN ANTONIO WATER SYSTEM SPECIFICATIONS FOR WATER CONSTRUCTION.

UTILITY NOTES:

CALL THE TEXAS WIDE STATE ONE CALL LOCATOR AT 1-800-344-8377. 48 HOURS BEFORE ANY CONSTRUCTION.

DUE TO FEDERAL REGULATION TITLE 49, PART 192.181, CENTERPOINT ENERGY MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR/ FOREMAN MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING OVERHEAD AND UNDERGROUND ELECTRIC FACILITIES IF ADJACENT TO WORK AREA.

THE EXISTENCE AND LOCATION ALL UNDERGROUND UTILITIES INDICATED ON THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR/FOREMAN IS RESPONSIBLE FOR MAINTAINING AND PROTECTING THE INTEGRITY OF POWER POLES AND UNDERGROUND ELECTRIC CABLES DURING (NSPI) CONSTRUCTION. 48 HOURS BEFORE BEGINNING ANY EXCAVATION. CALL THE TEXAS WIDE STATE ONE CALL LOCATOR AT 1-800-344-8377. CONTRACTOR TO PROTECT AND SUPPORT TELEPHONE COMPANY PLANT DURING CONTRUCTION.

THE CITY OF
Seguin
TEXAS

BS 123
12" WATER MAIN LOOP PHASE II & III

FROM HWY 90A AT PRESTON SOUTH TO FM 466 (EASTWOOD DR) EAST AND SOUTH TO COUNTRY SIDE BOULEVARD.

CITY OF SEGUIN, TEXAS

klotz associates
7550 IH-10 West
Northwest Center, Suite 300
San Antonio, TX 78229
Phone: (210) 736-0425
Fax: (210) 736-0405
sanantonio.office@klotz.com
Texas PE Firm Reg. #F-929

SURVEY BENCHMARK:

BEARING BASED ON NAVD 1988 – TEXAS STATE PLANE COORDINATES, SOUTH CENTRAL ZONE.

#1) TXDOT ALUMINUM MONUMENT LOCATED ON EAST COURT STREET (US 90A) 21.06' FROM THE NORTHWEST CORNER OF LOT 15 (VOL. 719, PG 1217) ELEVATION=523.05

#2) A FOUND ½" REBAR WITH CAP "BA." ELEVATION=522.78'

#3) SANIATRY SEWER MANHOLE LOCATED 350' SOUTH OF COUNTRY LANE ON COUNTRYSIDE DRIVE. ELEVATION=531.26'

#4) SANITARY SEWER MANHOLE LOCATED WEST ON COUNTRYSIDE ESTATES LOT 7 (VOL.5, PG 293B M.R). ELEVATION=533.10'

REV	DESCRIPTION	BY	DATE

WATERLINE PLAN AND PROFILE

BEGIN PROJECT TO STA. 19+00.00

STATE OF TEXAS
LUIS A. CUELLAR
69656
REGISTERED PROFESSIONAL ENGINEER

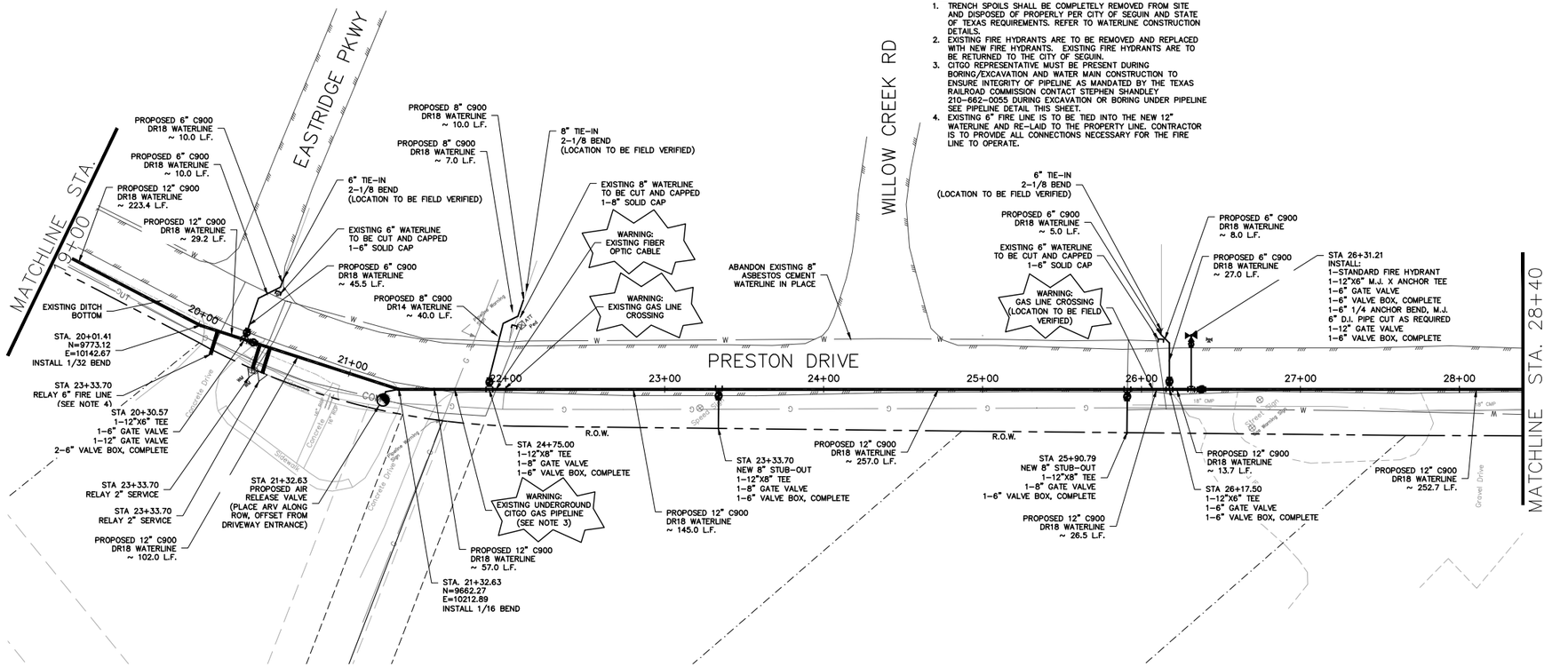
08/01/2014

CITY OF SEGUIN 123 BYPASS WATER LOOP

Klotz Project No 0131.001.001

Drawn By BAL	Checked By LAC
Scale	Date AUGUST 2014
DWG No C11.0	Sheet 11 Of 18

T:\0131.001.001\07.00 CADD\02-Construction Drawings\0131.001 C11.0-C14.0_P&P Sheets.dwg Aug 01 2014



CONSTRUCTION NOTES:

1. TRENCH SPOILS SHALL BE COMPLETELY REMOVED FROM SITE AND DISPOSED OF PROPERLY PER CITY OF SEGUIN AND STATE OF TEXAS REQUIREMENTS. REFER TO WATERLINE CONSTRUCTION DETAILS.
2. EXISTING FIRE HYDRANTS ARE TO BE REMOVED AND REPLACED WITH NEW FIRE HYDRANTS. EXISTING FIRE HYDRANTS ARE TO BE RETURNED TO THE CITY OF SEGUIN.
3. CITGO REPRESENTATIVE MUST BE PRESENT DURING BORING/EXCAVATION AND WATER MAIN CONSTRUCTION TO ENSURE INTEGRITY OF PIPELINE AS MANDATED BY THE TEXAS RAILROAD COMMISSION CONTACT STEPHEN SHANDLEY 210-662-0055 DURING EXCAVATION OR BORING UNDER PIPELINE SEE PIPELINE DETAIL THIS SHEET.
4. EXISTING 6" FIRE LINE IS TO BE TIED INTO THE NEW 12" WATERLINE AND RE-LAID TO THE PROPERTY LINE. CONTRACTOR IS TO PROVIDE ALL CONNECTIONS NECESSARY FOR THE FIRE LINE TO OPERATE.

LEGEND

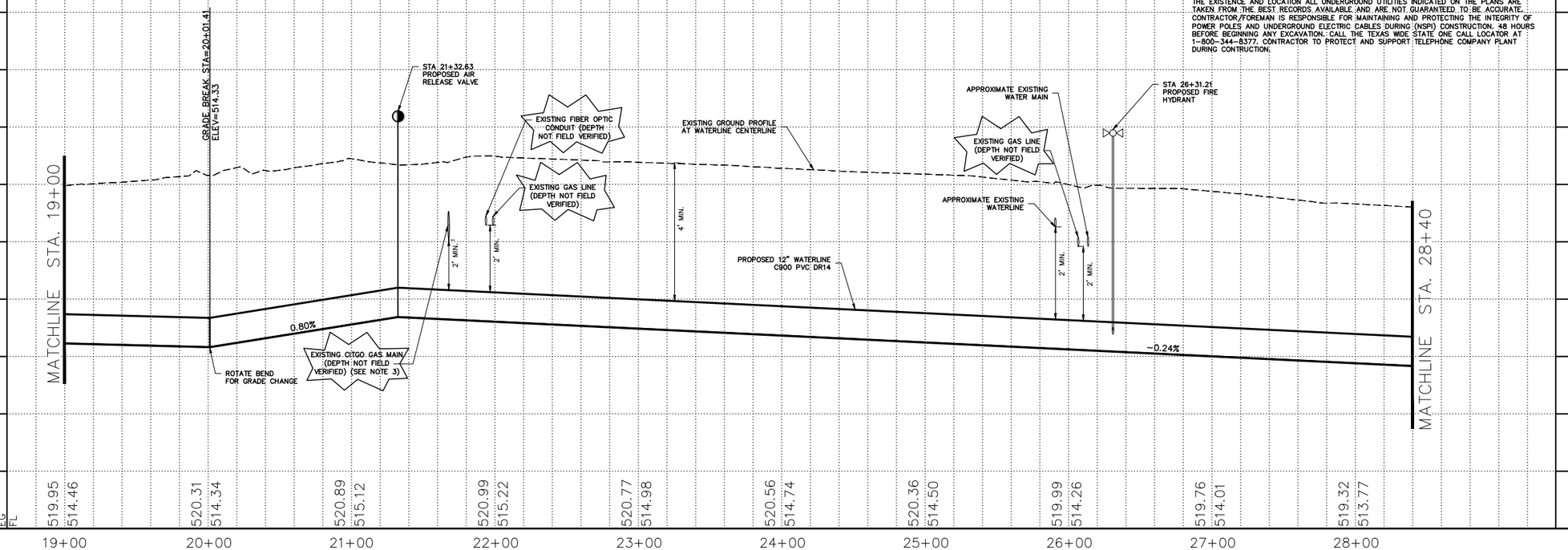
- PROP. WATER MAIN
- PROP. WATER VALVE
- PROP. AIR VALVE
- EXIST. WATER MAIN
- GAS MAIN
- SANITARY SEWER
- STORM SEWER
- UTILITY POLE LINE
- ELECTRIC CABLE
- TELEPHONE CABLE
- EXIST. METER LOCATION
- SERVICE RELAY:
- RELOCATE METER
- RIGHT-OF-WAY
- EXISTING EDGE OF PAVEMENT

PLAN SCALE:
HORIZONTAL 1"=40'

0 40' 80'
GRAPHIC SCALE 40'

PROFILE SCALE:
HORIZONTAL 1"=40'
VERTICAL 1"=2'

0 2' 4'
GRAPHIC SCALE 2'



TRENCH EXCAVATION SAFETY PROTECTION:

TRENCH EXCAVATION PROTECTION SHALL BE ACCOMPLISHED AS REQUIRED BY THE PROVISIONS OF PART 1926, SUBPART P-EXCAVATION, TRENCHING, AND SHORING OF THE OCCUPATIONAL SAFETY AND HEALTH'S STANDARDS AND INTERPRETATIONS. THE CONTRACTOR/FOREMAN SHALL ALSO COMPLY WITH 550, TRENCH EXCAVATION PROTECTION; SAN ANTONIO WATER SYSTEM SPECIFICATIONS FOR WATER CONSTRUCTION.

UTILITY NOTES:

CALL THE TEXAS WIDE STATE ONE CALL LOCATOR AT 1-800-344-8377. 48 HOURS BEFORE ANY CONSTRUCTION.

DUE TO FEDERAL REGULATION TITLE 49, PART 192.181, CENTERPOINT ENERGY MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR/ FOREMAN MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING OVERHEAD AND UNDERGROUND ELECTRIC FACILITIES IF ADJACENT TO WORK AREA.

THE EXISTENCE AND LOCATION ALL UNDERGROUND UTILITIES INDICATED ON THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR/FOREMAN IS RESPONSIBLE FOR MAINTAINING AND PROTECTING THE INTEGRITY OF POWER POLES AND UNDERGROUND ELECTRIC CABLES DURING (NSPI) CONSTRUCTION. 48 HOURS BEFORE BEGINNING ANY EXCAVATION. CALL THE TEXAS WIDE STATE ONE CALL LOCATOR AT 1-800-344-8377. CONTRACTOR TO PROTECT AND SUPPORT TELEPHONE COMPANY PLANT DURING CONTRUCTION.

THE CITY OF
Seguin
TEXAS

BS 123
12" WATER MAIN LOOP
PHASE II & III

FROM HWY 90A AT PRESTON SOUTH TO FM 466 (EASTWOOD DR) EAST AND SOUTH TO COUNTRY SIDE BOULEVARD.

CITY OF SEGUIN, TEXAS

klotz associates
7550 IH-10 West
Northwest Center, Suite 300
San Antonio, TX 78229
Phone: (210) 736-0425
Fax: (210) 736-0405
sanantonio.office@klotz.com
Texas PE Firm Reg. #F-929

SURVEY BENCHMARK:

BEARING BASED ON NAVD 1988 – TEXAS STATE PLANE COORDINATES, SOUTH CENTRAL ZONE.

#1) TXDOT ALUMINUM MONUMENT LOCATED ON EAST COURT STREET (US 90A) 21.06' FROM THE NORTHWEST CORNER OF LOT 15 (VOL. 719, PG 1217) ELEVATION=523.05

#2) A FOUND ½" REBAR WITH CAP "BA." ELEVATION=522.78'

#3) SANIATRY SEWER MANHOLE LOCATED 350' SOUTH OF COUNTRY LANE ON COUNTRYSIDE DRIVE. ELEVATION=531.26'

#4) SANITARY SEWER MANHOLE LOCATED WEST ON COUNTRYSIDE ESTATES LOT 7 (VOL.5, PG 293B M.R). ELEVATION=533.10'

REV	DESCRIPTION	BY	DATE

WATERLINE PLAN AND PROFILE

STA. 19+00.00 TO STA. 28+40.00

STATE OF TEXAS
LUIS A. CUELLAR
89656
REGISTERED PROFESSIONAL ENGINEER

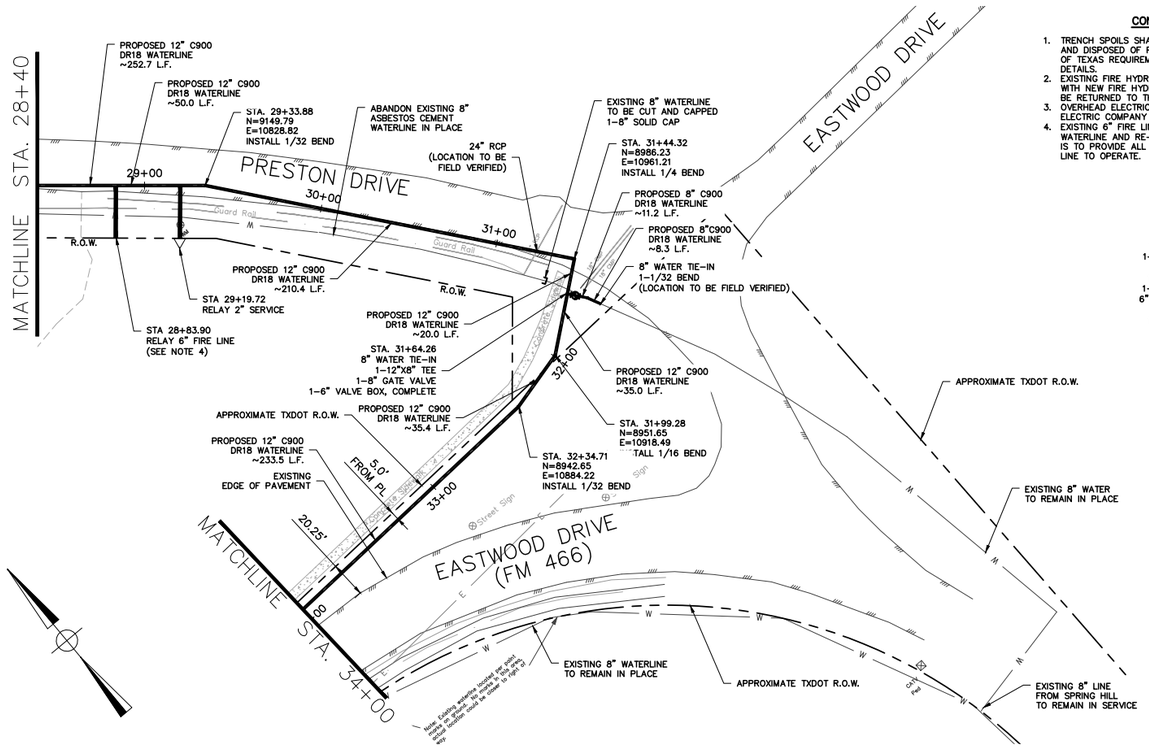
08/01/2014

CITY OF SEGUIN 123 BYPASS WATER LOOP

Klotz Project No 0131.001.001

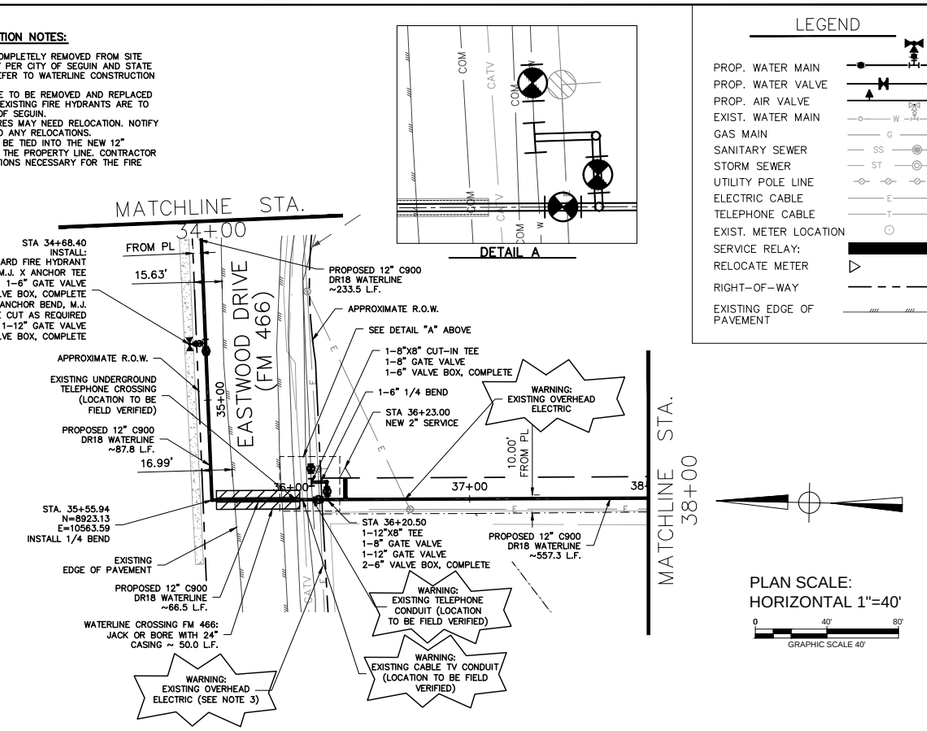
Drawn By BAL	Checked By LAC
Scale	Date AUGUST 2014
DWG No C12.0	Sheet 12 Of 18

T:\0131.001.001\07.00 CADD\02-Construction Drawings\0131.001 C11.0-C14.0_P&P Sheets.dwg Aug 01 2014



CONSTRUCTION NOTES:

1. TRENCH SPOILS SHALL BE COMPLETELY REMOVED FROM SITE AND DISPOSED OF PROPERLY PER CITY OF SEGUIN AND STATE OF TEXAS REQUIREMENTS. REFER TO WATERLINE CONSTRUCTION DETAILS.
2. EXISTING FIRE HYDRANTS ARE TO BE REMOVED AND REPLACED WITH NEW FIRE HYDRANTS. EXISTING FIRE HYDRANTS ARE TO BE RETURNED TO THE CITY OF SEGUIN.
3. OVERHEAD ELECTRIC GUY WIRES MAY NEED RELOCATION. NOTIFY ELECTRIC COMPANY PRIOR TO ANY RELOCATIONS.
4. EXISTING 6" FIRE LINE IS TO BE TIED INTO THE NEW 12" WATERLINE AND RE-LAID TO THE PROPERTY LINE. CONTRACTOR IS TO PROVIDE ALL CONNECTIONS NECESSARY FOR THE FIRE LINE TO OPERATE.



DETAIL A

PLAN SCALE:
HORIZONTAL 1"=40'

0 40' 80'
GRAPHIC SCALE 40'

LEGEND

- PROP. WATER MAIN
- PROP. WATER VALVE
- PROP. AIR VALVE
- EXIST. WATER MAIN
- GAS MAIN
- SANITARY SEWER
- STORM SEWER
- UTILITY POLE LINE
- ELECTRIC CABLE
- TELEPHONE CABLE
- EXIST. METER LOCATION
- SERVICE RELAY:
- RELOCATE METER
- RIGHT-OF-WAY
- EXISTING EDGE OF PAVEMENT

THE CITY OF
Seguin
TEXAS

BS 123
12" WATER MAIN LOOP
PHASE II & III

FROM HWY 90A AT PRESTON SOUTH TO FM 466 (EASTWOOD DR) EAST AND SOUTH TO COUNTRY SIDE BOULEVARD.

CITY OF SEGUIN, TEXAS

klotz associates
7550 IH-10 West
Northwest Center, Suite 300
San Antonio, TX 78229
Phone: (210) 736-0425
Fax: (210) 736-0405
sanantonio.office@klotz.com
Texas PE Firm Reg. #F-929

SURVEY BENCHMARK:

BEARING BASED ON NAVD 1988 – TEXAS STATE PLANE COORDINATES, SOUTH CENTRAL ZONE.

#1) TXDOT ALUMINUM MONUMENT LOCATED ON EAST COURT STREET (US 90A) 21.06' FROM THE NORTHWEST CORNER OF LOT 15 (VOL. 719, PG 1217) ELEVATION=523.05

#2) A FOUND ½" REBAR WITH CAP "BA." ELEVATION=522.78'

#3) SANIATRY SEWER MANHOLE LOCATED 350' SOUTH OF COUNTRY LANE ON COUNTRYSIDE DRIVE. ELEVATION=531.26'

#4) SANITARY SEWER MANHOLE LOCATED WEST ON COUNTRYSIDE ESTATES LOT 7 (VOL.5, PG 293B M.R). ELEVATION=533.10'

REV	DESCRIPTION	BY	DATE

UTILITY NOTES:

CALL THE TEXAS WIDE STATE ONE CALL LOCATOR AT 1-800-344-8377. 48 HOURS BEFORE ANY CONSTRUCTION.

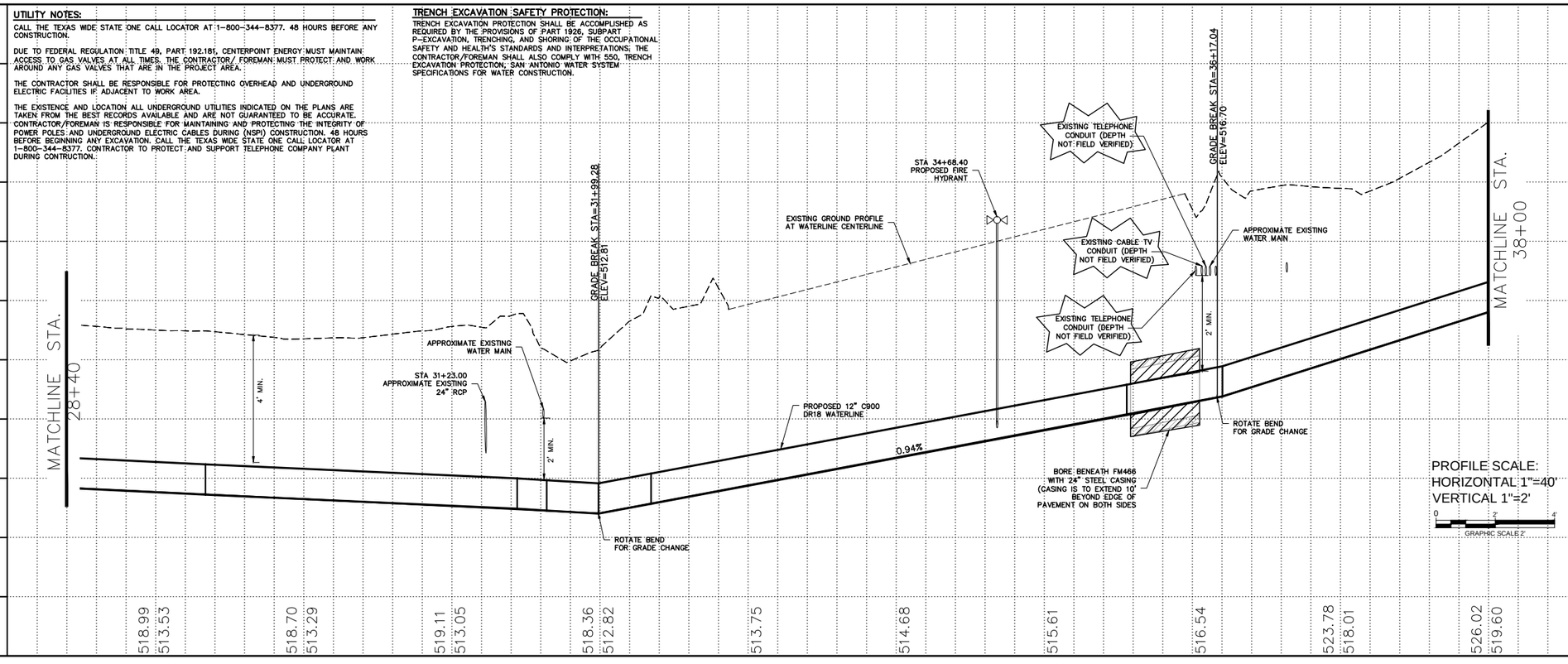
DUE TO FEDERAL REGULATION TITLE 49, PART 192.181, CENTERPOINT ENERGY MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR/ FOREMAN MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING OVERHEAD AND UNDERGROUND ELECTRIC FACILITIES IF ADJACENT TO WORK AREA.

THE EXISTENCE AND LOCATION ALL UNDERGROUND UTILITIES INDICATED ON THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR/FOREMAN IS RESPONSIBLE FOR MAINTAINING AND PROTECTING THE INTEGRITY OF POWER POLES AND UNDERGROUND ELECTRIC CABLES DURING (NSPI) CONSTRUCTION. 48 HOURS BEFORE BEGINNING ANY EXCAVATION, CALL THE TEXAS WIDE STATE ONE CALL LOCATOR AT 1-800-344-8377. CONTRACTOR TO PROTECT AND SUPPORT TELEPHONE COMPANY PLANT DURING CONTRUCTION.

TRENCH EXCAVATION SAFETY PROTECTION:

TRENCH EXCAVATION PROTECTION SHALL BE ACCOMPLISHED AS REQUIRED BY THE PROVISIONS OF PART 1926, SUBPART P-EXCAVATION, TRENCHING, AND SHORING OF THE OCCUPATIONAL SAFETY AND HEALTH'S STANDARDS AND INTERPRETATIONS. THE CONTRACTOR/FOREMAN SHALL ALSO COMPLY WITH 550, TRENCH EXCAVATION PROTECTION; SAN ANTONIO WATER SYSTEM SPECIFICATIONS FOR WATER CONSTRUCTION.



PROFILE SCALE:
HORIZONTAL 1"=40'
VERTICAL 1"=2'

0 2' 4'
GRAPHIC SCALE 2'

STATE OF TEXAS
LUIS A. CUELLAR
89656
REGISTERED PROFESSIONAL ENGINEER

08/01/2014

CITY OF SEGUIN
123 BYPASS WATER LOOP

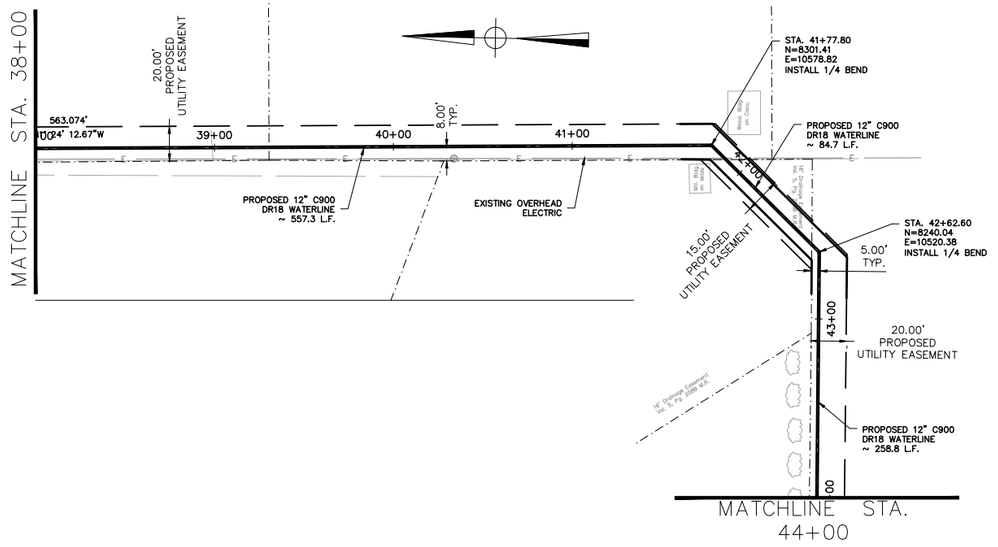
Klotz Project No 0131.001.001

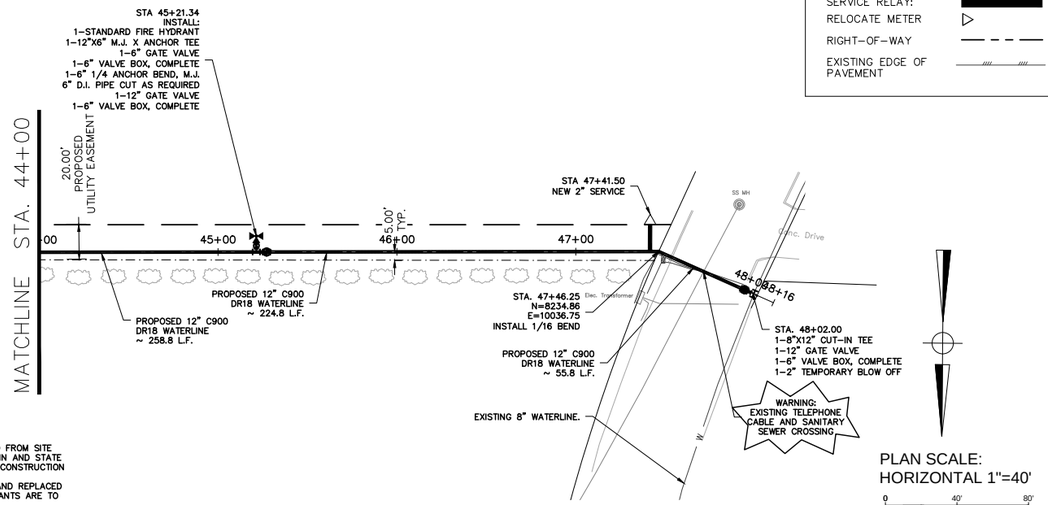
Drawn By BAL	Checked By LAC
Scale	Date AUGUST 2014
DWG No C13.0	Sheet 13 Of 18

WATERLINE PLAN AND PROFILE

STA. 28+40.00
TO
STA. 38+00.00

T:\0131.001.001\07.00 CADD\02-Construction Drawings\0131.001 C11.0-C14.0_P&P Sheets.dwg Aug 01 2014





PLAN SCALE:
HORIZONTAL 1"=40'

0 40' 80'
GRAPHIC SCALE 40'

LEGEND

- PROP. WATER MAIN
- PROP. WATER VALVE
- PROP. AIR VALVE
- EXIST. WATER MAIN
- GAS MAIN
- SANITARY SEWER
- STORM SEWER
- UTILITY POLE LINE
- ELECTRIC CABLE
- TELEPHONE CABLE
- EXIST. METER LOCATION
- SERVICE RELAY:
- RELOCATE METER
- RIGHT-OF-WAY
- EXISTING EDGE OF PAVEMENT

UTILITY NOTES:

CALL THE TEXAS WIDE STATE ONE CALL LOCATOR AT 1-800-344-8377. 48 HOURS BEFORE ANY CONSTRUCTION.

DUE TO FEDERAL REGULATION TITLE 49, PART 192.181, CENTERPOINT ENERGY MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR/ FOREMAN MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING OVERHEAD AND UNDERGROUND ELECTRIC FACILITIES IF ADJACENT TO WORK AREA.

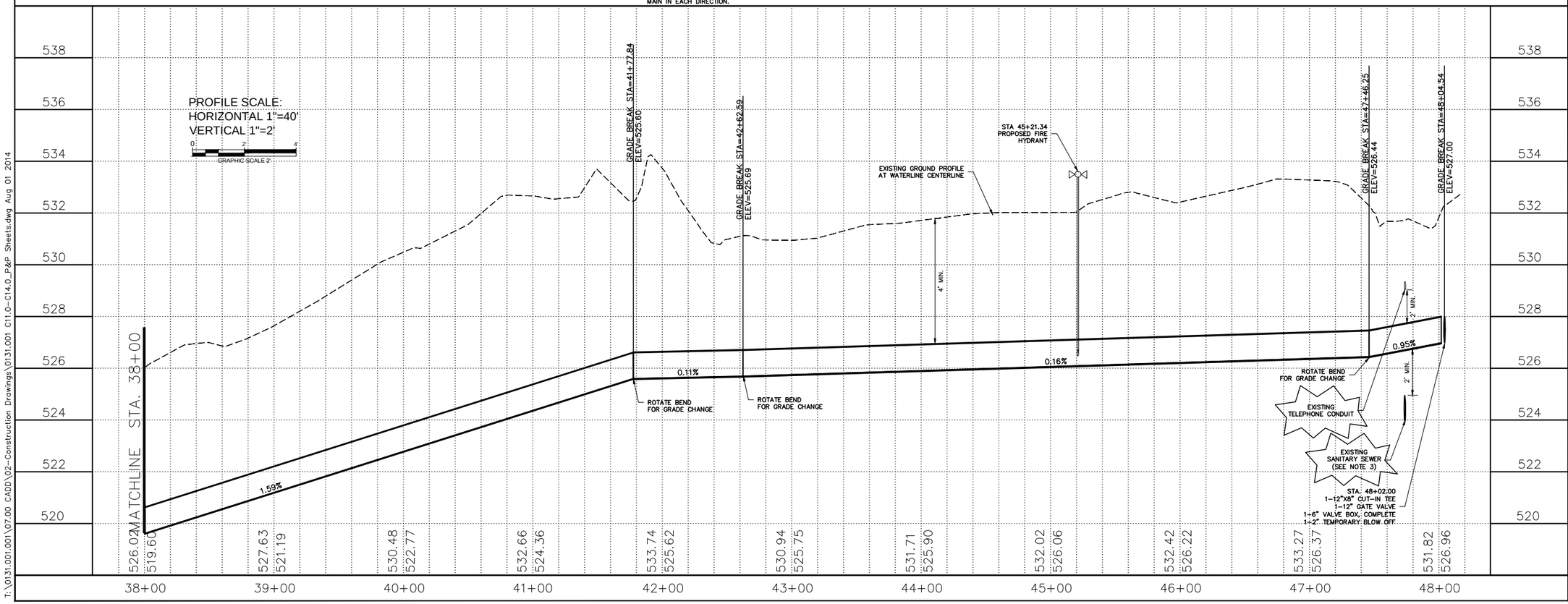
THE EXISTENCE AND LOCATION ALL UNDERGROUND UTILITIES INDICATED ON THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR/FOREMAN IS RESPONSIBLE FOR MAINTAINING AND PROTECTING THE INTEGRITY OF POWER POLES AND UNDERGROUND ELECTRIC CABLES DURING (NSPI) CONSTRUCTION. 48 HOURS BEFORE BEGINNING ANY EXCAVATION. CALL THE TEXAS WIDE STATE ONE CALL LOCATOR AT 1-800-344-8377. CONTRACTOR TO PROTECT AND SUPPORT TELEPHONE COMPANY PLANT DURING CONTRUCTION.

TRENCH EXCAVATION SAFETY PROTECTION:

TRENCH EXCAVATION PROTECTION SHALL BE ACCOMPLISHED AS REQUIRED BY THE PROVISIONS OF PART 1926, SUBPART P-EXCAVATION, TRENCHING, AND SHORING OF THE OCCUPATIONAL SAFETY AND HEALTH'S STANDARDS AND INTERPRETATIONS. THE CONTRACTOR/FOREMAN SHALL ALSO COMPLY WITH 550, TRENCH EXCAVATION PROTECTION, SAN ANTONIO WATER SYSTEM SPECIFICATIONS FOR WATER CONSTRUCTION.

CONSTRUCTION NOTES:

1. TRENCH SPOILS SHALL BE COMPLETELY REMOVED FROM SITE AND DISPOSED OF PROPERLY PER CITY OF SEGUIN AND STATE OF TEXAS REQUIREMENTS. REFER TO WATERLINE CONSTRUCTION DETAILS.
2. EXISTING FIRE HYDRANTS ARE TO BE REMOVED AND REPLACED WITH NEW FIRE HYDRANTS. EXISTING FIRE HYDRANTS ARE TO BE RETURNED TO THE CITY OF SEGUIN.
3. PLACE WATERLINE OVER SANITARY SEWER IN ACCORDANCE WITH TCEQ REGULATIONS. NEW WATER LINE SEGMENT SHALL BE CENTERED OVER THE SANITARY WITH A MINIMUM OF 9 FEET EXTENDING HORIZONALLY AWAY FROM THE SANITARY SEWER MAIN IN EACH DIRECTION.



THE CITY OF
Seguin
TEXAS

BS 123
12" WATER MAIN LOOP
PHASE II & III

FROM HWY 90A AT PRESTON SOUTH TO FM 466 (EASTWOOD DR) EAST AND SOUTH TO COUNTRY SIDE BOULEVARD.

CITY OF SEGUIN, TEXAS

klotz associates
7550 IH-10 West
Northwest Center, Suite 300
San Antonio, TX 78229
Phone: (210) 736-0425
Fax: (210) 736-0405
sanantonio.office@klotz.com
Texas PE Firm Reg. #F-929

SURVEY BENCHMARK:

BEARING BASED ON NAVD 1988 – TEXAS STATE PLANE COORDINATES, SOUTH CENTRAL ZONE.

#1) TXDOT ALUMINUM MONUMENT LOCATED ON EAST COURT STREET (US 90A) 21.06' FROM THE NORTHWEST CORNER OF LOT 15 (VOL. 719, PG 1217) ELEVATION=523.05

#2) A FOUND ½" REBAR WITH CAP "BA." ELEVATION=522.78'

#3) SANITARY SEWER MANHOLE LOCATED 350' SOUTH OF COUNTRY LANE ON COUNTRYSIDE DRIVE. ELEVATION=531.26'

#4) SANITARY SEWER MANHOLE LOCATED WEST ON COUNTRYSIDE ESTATES LOT 7 (VOL.5, PG 293B M.R). ELEVATION=533.10'

REV	DESCRIPTION	BY	DATE

WATERLINE PLAN AND PROFILE

STA. 38+00.00 TO END PROJECT

STATE OF TEXAS
LUIS A. CUELLAR
89656
REGISTERED PROFESSIONAL ENGINEER

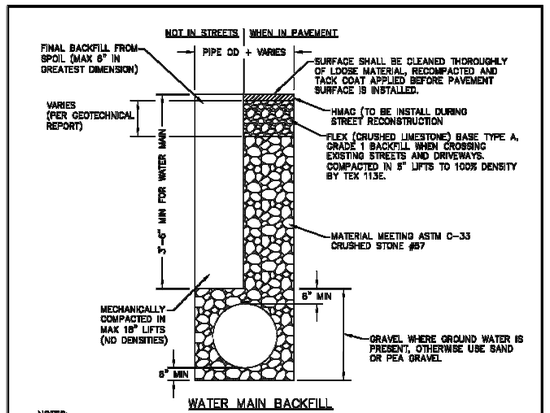
08/01/2014

CITY OF SEGUIN 123 BYPASS WATER LOOP

Klotz Project No 0131.001.001

Drawn By BAL	Checked By LAC
Scale	Date AUGUST 2014
DWG No C14.0	Sheet 14 Of 18

T:\0131.001.001\07.00 CADD\02-Construction Drawings\0131.001 C11.0-C14.0_P&P Sheets.dwg Aug 01 2014

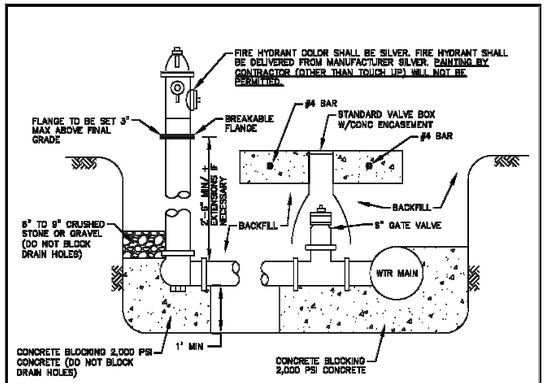


WATER MAIN BACKFILL

NOTES:

1. FOR ASPHALT OR CONCRETE STREET REPAIRS WHERE THE SAW-CUT PAVEMENT EDGE WILL BE WITHIN 3' OF EDGE OF EXISTING PAVEMENT OR LIP OF GUTTER, THE EXISTING PAVEMENT SURFACE BETWEEN THE DITCH LINE AND EDGE OF PAVEMENT OR LIP OF GUTTER SHALL BE REMOVED AND REPLACED WITH MATERIAL SPECIFIED. (INCLUDE IN STREET REPAIR BID ITEM).
2. FOR STREETS NOT BEING RECONSTRUCTED, SURFACE MATERIALS SHALL BE EQUAL TO MATERIAL REMOVED--MINIMUM AMOUNTS; 1½" HMAC (TxDOT ITEM 340, TYPE D) EXISTING ASPHALT TO BE SAW CUT. (INCLUDE IN STREET REPAIR BID ITEM).
3. WATER LINE BACKFILL TYPE SHALL BE DETERMINED BY LIMITS OF PROPOSED STREETS, NOT EXISTING.
4. FOR STREETS BEING RECONSTRUCTED ONLY, CONTRACTOR MAY BACKFILL FINAL 12" WITH COMPACTED SPOIL MATERIAL PRIOR TO STREET EXCAVATION TO ALLOW FOR TRAFFIC FLOW. MATERIAL MUST BE PASSABLE FOR ALL VEHICULAR TRAFFIC.
5. TRACER WIRE (14 GAUGE SOLID) FOR NONMETALLIC WATER LINE SHALL BE PLACED DIRECTLY ABOVE THE CENTERLINE OF THE PIPE AND A MINIMUM OF 12 INCHES BELOW THE SUBGRADE SHALL BE PLACED INDUCTIVE TRACER WIRE IN ACCORDANCE WITH THE MANUFACTURE'S REQUIREMENTS. THE WIRE SHALL BE ENCASED IN A PROTECTIVE, INERT, PLASTIC JACKET AND COLOR CODED IN ACCORDANCE WITH APWA UNIFORM COLOR CODE.

THE CITY OF SEGUIN	DATE ISSUED: JUNE 1, 2013	TITLE: WATER MAIN BACKFILL
	REV / DATE / BY	SCALE: N.T.S. / DRAWING No. WTR-2



MATERIALS FOR THE FIRE HYDRANT ASSEMBLIES SHALL BE PAID FOR AS FOLLOWS:

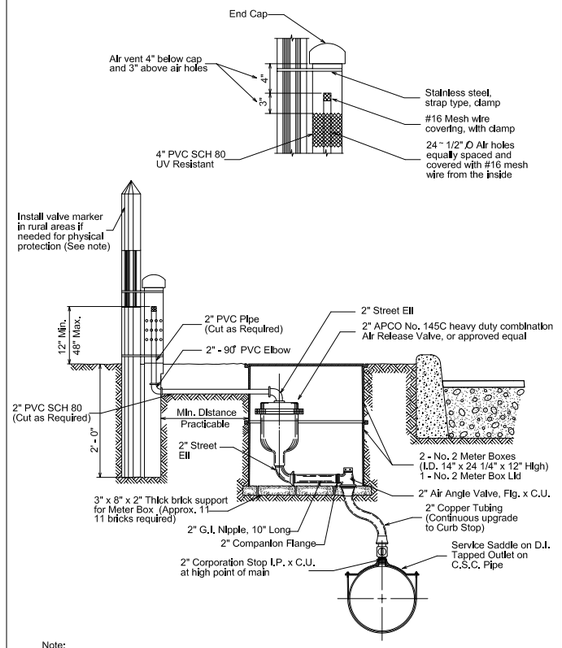
MAIN LINE TEE – DUCTILE IRON FITTINGS BID ITEM
6" PIPE – 6" PIPE BID ITEM
FIRE HYDRANT, BURY AND CONCRETE BLOCKING – FIRE HYDRANT BID ITEM

FIRE HYDRANT ASSEMBLY
(MUELLER OR CLOW ONLY)

NOTES:

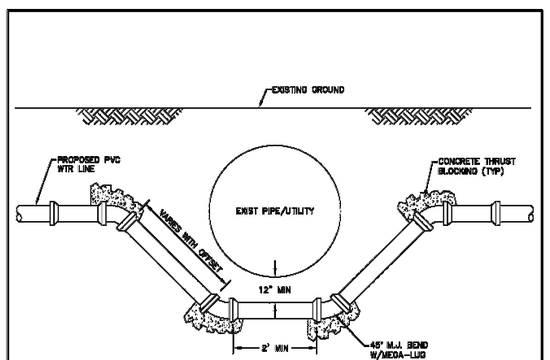
1. CONTRACTOR SHALL INSTALL BLUE REFLECTOR CENTERED ON PROPOSED STREET @ EACH PROPOSED/EXISTING FIRE HYDRANT.
2. BACKFILL MATERIAL SHALL MEET ASTM C-33 CRUSHED STONE #57.

THE CITY OF SEGUIN	DATE ISSUED: JUNE 1, 2013	TITLE: FIRE HYDRANT ASSEMBLY (MUELLER OR CLOW ONLY)
	REV / DATE / BY	SCALE: N.T.S. / DRAWING No. WTR-8



Note:
In rural areas, riser should be at Property Line and at maximum height.

PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS	INSTALLATION OF 2" AIR RELEASE VALVE	APPROVED: AUGUST 1998	REVISED	DD-846-02	SHEET 1 OF 1

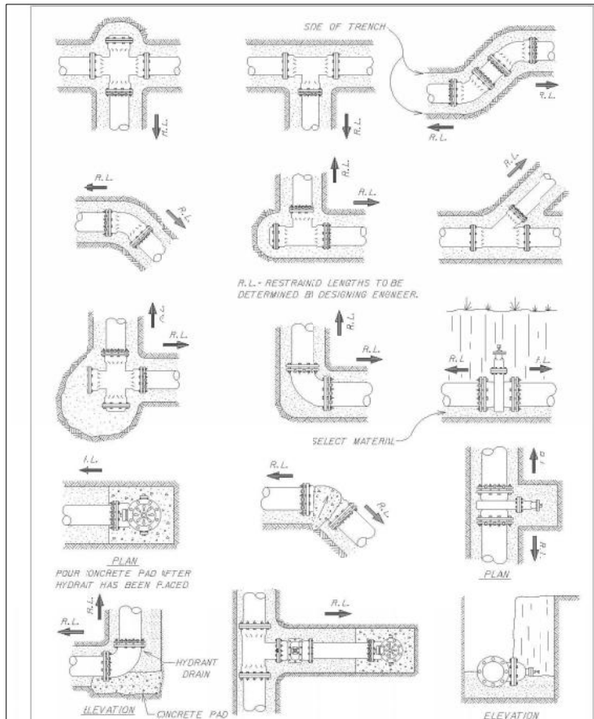


WATER MAIN OFFSET DETAIL

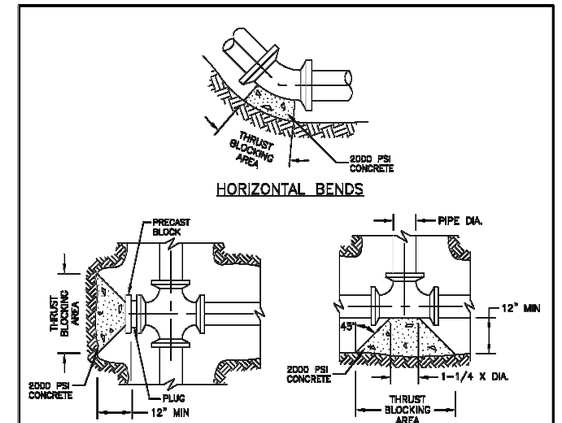
NOTES:

1. MATERIALS AND COATINGS TO BE ACCORDANCE WITH WATER MAIN STANDARD SPECIFICATIONS.
2. RESTRAIN EXISTING PIPE BEYOND SECTION AS REQUIRED TO PREVENT MOVEMENT.
3. DUCTILE IRON PIPE FOR WATER LINE CONSTRUCTION SHALL BE ANSI/AWWA-C-150/A21.50 PRESSURE CLASS 250 UNLESS OTHERWISE NOTED.
4. FITTINGS SHALL CONFORM TO ANSI/AWWA-C110/A21.10 OR ANSI/AWWA-C153/A21.53 AND ANSI/AWWA-C111/A21.11 STANDARDS.
5. ALL FITTINGS SHALL BE CEMENT LINED ACCORDING TO ANSI/AWWA-C104/A21.4.
6. FITTINGS SHALL BE DUCTILE IRON OR COMPACT DUCTILE IRON.
7. D.I. PIPE SHALL INCLUDE POLYETHYLENE WRAP AS DETAILED IN THE SPECIFICATIONS.

	DATE ISSUED: JUNE 1, 2013	TITLE
	REV / DATE / BY	SCALE: N.T.S. / DRAWING No. WTR-1



PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS	JOINT RESTRAINTS FOR FITTINGS (WATER ONLY)	APPROVED: MARCH 2008	REVISED	DD-139-01	SHEET 2 OF 2



THRUST BLOCKING AREA REQUIRED (SQUARE FEET)

PIPE DIA.	TEE, CROSS, OR END	90° BEND	45° BEND	22 1/2° BEND
4"	1.00	1.00	0.75	0.50
6"	1.00	1.00	0.75	0.50
8"	1.80	1.80	1.25	0.90
12"	5.40	5.40	4.20	3.00
16 & 18"	11.40	11.40	8.70	6.00

THRUST BLOCKING DETAILS

THE CITY OF SEGUIN	DATE ISSUED: JUNE 1, 2013	TITLE: THRUST BLOCK DETAILS
	REV / DATE / BY	SCALE: N.T.S. / DRAWING No. WTR-3

THE CITY OF SEGUIN
TEXAS

BS 123
12" WATER MAIN LOOP
PHASE II & III

FROM HWY 90A AT PRESTON SOUTH TO FM 466 (EASTWOOD DR) EAST AND SOUTH TO COUNTRY SIDE BOULEVARD.

CITY OF SEGUIN, TEXAS

klotz associates
7550 IH-10 West
Northwest Center, Suite 300
San Antonio, TX 78229
Phone: (210) 736-0425
Fax: (210) 736-0405
sanantonio.office@klotz.com
Texas PE Firm Reg. #F-929

SURVEY BENCHMARK:

BEARING BASED ON NAVD 1988 – TEXAS STATE PLANE COORDINATES, SOUTH CENTRAL ZONE.

#1) TXDOT ALUMINUM MONUMENT LOCATED ON EAST COURT STREET (US 90A) 21.06' FROM THE NORTHWEST CORNER OF LOT 15 (VOL. 719, PG 1217) ELEVATION=523.05

#2) A FOUND ½" REBAR WITH CAP "BA." ELEVATION=522.78'

#3) SANIATRY SEWER MANHOLE LOCATED 350' SOUTH OF COUNTRY LANE ON COUNTRYSIDE DRIVE. ELEVATION=531.26'

#4) SANITARY SEWER MANHOLE LOCATED WEST ON COUNTRYSIDE ESTATES LOT 7 (VOL.5, PG 293B M.R). ELEVATION=533.10'

REV	DESCRIPTION	BY	DATE

WATER LINE CONSTRUCTION DETAILS
SHEET 1 OF 5

STATE OF TEXAS
LUIS A. CUELLAR
89656
REGISTERED PROFESSIONAL ENGINEER

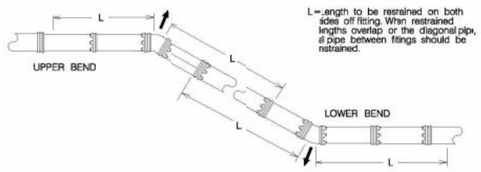
08/01/2014

CITY OF SEGUIN
123 BYPASS WATER LOOP

Klotz Project No 0131.001.001

Drawn By BAL	Checked By LAC
Scale	Date July 2013
DWG No C15.0	Sheet 15 Of 18

T:\0131.001.001\07.00 CADD\02-Construction Drawings\0131.001 C15.0-C17.0_WTR Details-Revised.dwg Jul 26 2013



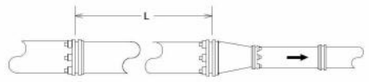
PIPE SIZE (inch)	BEND ANGLE (deg.)	LOW SIDE DEPTH	UPPER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 200 psi	LOWER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 200 psi	UPPER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 150 psi	LOWER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 150 psi
6	45	5	14	8	18	6
6	22.5	5	2	4	9	3
6	11.25	5	1	2	4	1
6	45	10	14	5	18	4
6	22.5	10	2	2	9	2
6	11.25	10	1	1	4	1
8	45	5	42	11	24	8
8	22.5	5	5	5	11	4
8	11.25	5	1	3	6	2
8	45	10	42	7	24	5
8	22.5	10	5	3	11	2
8	11.25	10	1	2	6	1
12	45	5	45	16	34	12
12	22.5	5	12	7	16	6
12	11.25	5	1	4	8	3
12	45	10	46	10	34	7
12	22.5	10	12	5	16	3
12	11.25	10	1	2	8	2

RESTRAINED LENGTH DESIGN

Restrained length calculations are for P.V.C. pipe bedded in compacted granular material extending to the top of the pipe. The native soil material is assumed to be inorganic clay of high plasticity. Depth of bury is assumed to be 4 feet.

Note:
These calculations are provided for reference. The restrained length shall be designed based upon the conditions encountered during the installation.

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	RESTRAINED LENGTHS FOR VERTICAL OFFSETS	March 2008	
		DD-839-06	SHEET 1 OF 1



L=length to be restrained

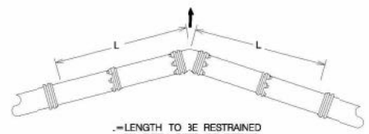
PIPE SIZE (inch)	SMALL SIZE (inch)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	4	30	23
8	4	55	42
8	6	32	24
12	4	95	71
12	6	80	60
12	8	58	43

RESTRAINED LENGTH DESIGN

Restrained length calculations are for P.V.C. pipe bedded in compacted granular material extending to the top of the pipe. The native soil material is assumed to be inorganic clay of high plasticity. Depth of bury is assumed to be 4 feet.

Note:
These calculations are provided for reference. The restrained length shall be designed based upon the conditions encountered during the installation.

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	RESTRAINED LENGTHS FOR REDUCERS	March 2008	
		DD-839-07	SHEET 1 OF 1



PIPE SIZE (inch)	BEND ANGLE (deg)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	90	23	17
6	45	9	7
6	22.5	5	3
6	11.25	2	2
8	90	30	22
8	45	12	9
8	22.5	6	4
8	11.25	3	2
12	90	43	32
12	45	18	13
12	22.5	8	6
12	11.25	4	3

RESTRAINED LENGTH DESIGN

Restrained length calculations are for P.V.C. pipe bedded in compacted granular material extending to the top of the pipe. The native soil material is assumed to be inorganic clay of high plasticity. Depth of bury is assumed to be 4 feet.

Note:
These calculations are provided for reference. The restrained length shall be designed based upon the conditions encountered during the installation.

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	RESTRAINED LENGTHS FOR HORIZONTAL BENDS	March 2008	
		DD-839-08	SHEET 1 OF 1

RESTRAINED LENGTH FOR TEES (Cont'd)

PIPE SIZE (inch)	BRANCH SIZE (inch)	LENGTH OF RUN (ft.)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
12	4	0	42	31
12	4	5	1	1
12	6	0	59	44
12	6	5	13	1
12	6	10	1	1
12	8	0	77	58
12	8	5	42	23
12	8	10	7	1
12	8	15	1	1
12	12	0	109	82
12	12	5	86	59
12	12	10	63	35
12	12	15	39	12

RESTRAINED LENGTH DESIGN

Restrained length calculations are for P.V.C. pipe bedded in compacted granular material extending to the top of the pipe. The native soil material is assumed to be inorganic clay of high plasticity. Depth of bury is assumed to be 4 feet.

Note:
These calculations are provided for reference. The restrained length shall be designed based upon the conditions encountered during the installation.

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	RESTRAINED LENGTHS FOR TEES	March 2008	
		DD-839-04	SHEET 2 OF 2

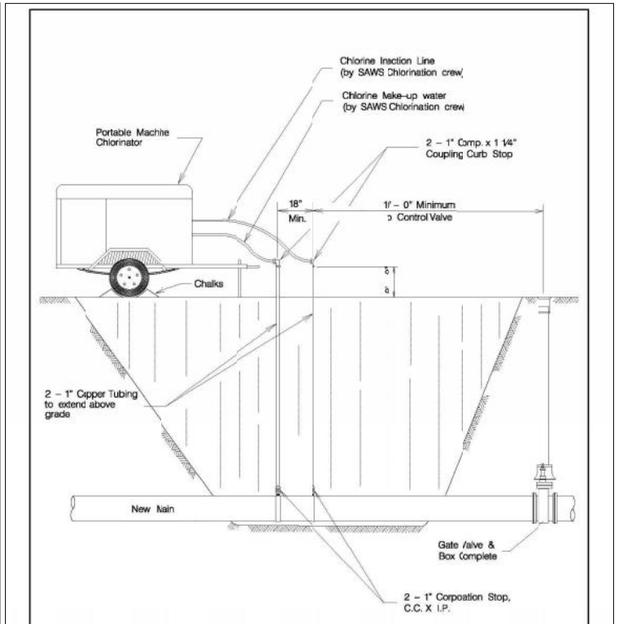
PIPE SIZE (inch)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	59	44
8	77	58
10	93	69
12	109	82

RESTRAINED LENGTH DESIGN

Restrained length calculations are for P.V.C. pipe bedded in compacted granular material extending to the top of the pipe. The native soil material is assumed to be inorganic clay of high plasticity. Depth of bury is assumed to be 4 feet.

Note:
These calculations are provided for reference. The restrained length shall be designed based upon the conditions encountered during the installation.

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	RESTRAINED LENGTHS FOR DEAD ENDS /INLINE VALVES	March 2008	
		DD-839-05	SHEET 1 OF 1



Note:
2 – 1 1/4" Solid Cap, Thd. to be installed on Corportion Stop after chlorination

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	STANDARD CHLORINATION INSTALLATION	March 2008	
		DD-847-01	SHEET 1 OF 1

TABLE 847-1
CHLORINE DOSAGE

Ounces Per Foot; Diameter of Pipe in Inches	To Obtain 50 ppm Chlorine Dosage
6	0.0138
8	0.0233
10	1.0
12	0.0523
14	0.0708
16	0.0934
18	0.1175
20	0.1455
24	0.208
30	0.327
36	0.469
42	0.637
48	0.0833
54	1.0575
60	1.308

THE CITY OF
Seguin
TEXAS

BS 123
12" WATER MAIN LOOP
PHASE II & III

FROM HWY 90A AT PRESTON SOUTH TO FM 466 (EASTWOOD DR) EAST AND SOUTH TO COUNTRY SIDE BOULEVARD.

CITY OF SEGUIN, TEXAS

klotz associates
7550 IH-10 West
Northwest Center, Suite 300
San Antonio, TX 78229
Phone: (210) 736-0425
Fax: (210) 736-0405
sanantonio.office@klotz.com
Texas PE Firm Reg. #F-929

SURVEY BENCHMARK:

BEARING BASED ON NAVD 1988 – TEXAS STATE PLANE COORDINATES, SOUTH CENTRAL ZONE.

#1) TXDOT ALUMINUM MONUMENT LOCATED ON EAST COURT STREET (US 90A) 21.06' FROM THE NORTHWEST CORNER OF LOT 15 (VOL. 719, PG 1217)
ELEVATION=523.05

#2) A FOUND ½" REBAR WITH CAP "BA."
ELEVATION=522.78'

#3) SANIATRY SEWER MANHOLE LOCATED 350' SOUTH OF COUNTRY LANE ON COUNTRYSIDE DRIVE.
ELEVATION=531.26'

#4) SANITARY SEWER MANHOLE LOCATED WEST ON COUNTRYSIDE ESTATES LOT 7 (VOL.5, PG 293B M.R).
ELEVATION=533.10'

REV	DESCRIPTION	BY	DATE

WATER LINE CONSTRUCTION DETAILS
SHEET 2 OF 4

STATE OF TEXAS
LUIS A. CUELLAR
89656
REGISTERED PROFESSIONAL ENGINEER

08/01/2014

CITY OF SEGUIN
123 BYPASS WATER LOOP

Klotz Project No	0131.001.001
Drawn By	BAL
Checked By	LAC
Scale	
Date	July 2013
DWG No	C16.0
Sheet	16 Of 18

T:\0131.001\07.00 CADD\02-Construction Drawings\0131.001 C15.0-C17.0_WTR Details-Revised.dwg Jul 26, 2013

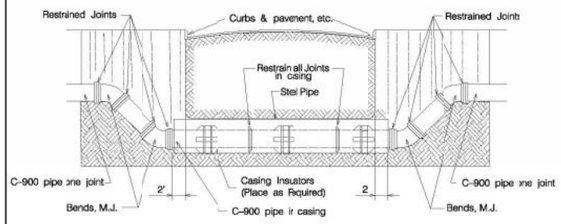
STEEL PIPE CASING /WATER MAIN		
Pipe Size (Inches)	Pipe Thickness (Inches)	Pipe Weight (Lbs./Ft.)
6	0.375	25.03
8	0.375	33.04
12	0.375	45.55
16	0.375	62.58
20	0.375	78.60
24	0.375	94.62
30	0.375	118.65

UNION PACIFIC RAILROAD CROSSING CASING REQUIREMENTS		
Nom.Dia. Steel Conduit (Inches)	Steel Pipe Thickness (Inches)	Pipe Weight (Lbs./Ft.)
18	0.375	70.59
24	0.438	110.22
30	0.5I	157.53
36	0.562	212.70
42	0.625	276.18
48	0.625	316.53

WATER MAINS IN CONDUIT			
Water Main Size (Inches)	Nom.Dia. RCP* Or Steel (Inches)	Steel Pipe Thickness (Inches)	Pipe Weight (Lbs/Ft.)
6	18	0.375	70.39
8	24	0.375	94.32
12	24	0.375	94.32
16	30	0.375	118.35
20	36	0.438	16619
24	42	0.438	19432
30	48	0.50	25902
36	54	0.50	29137

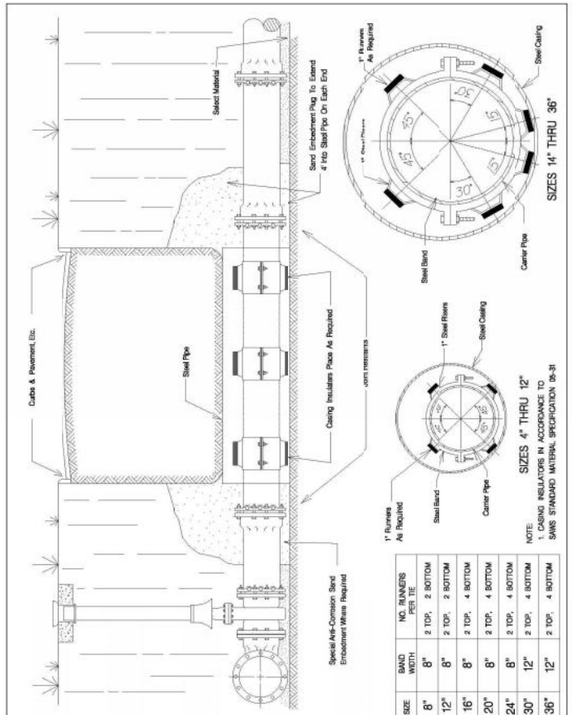
* Class II or IV Tongue and Groove, for non-railroad applications

PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	INSTALLATION OF PIPE IN CONDUIT	APPROVED March 2008	REVISED
		DD-856-01	SHEET 1 OF 2



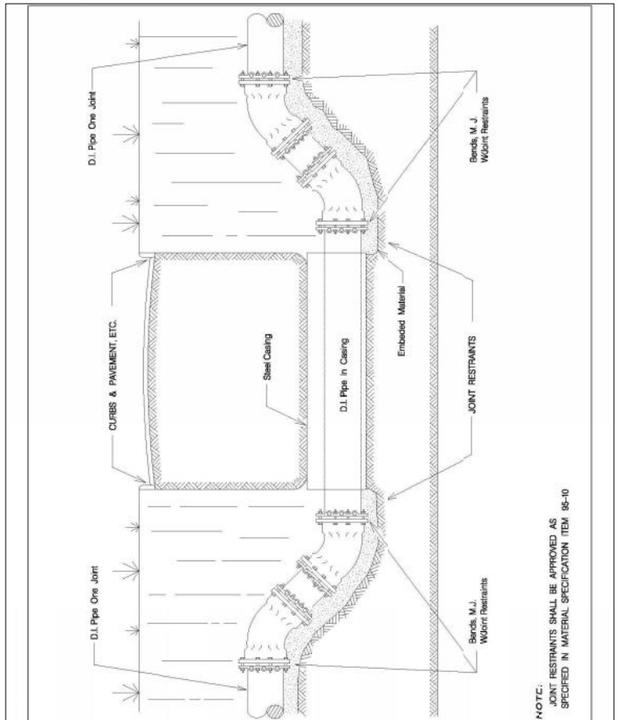
Notes:
Fittings shall be paid for by separate item
Joint restraints shall be approved as specified in Material Specification Item 05-10

PROPERTY OF SAN ANTONIO WATER SYSTEM IAN ANTONIO, TEXAS	INSTALLATION OF PIPE IN BORE	APPROVED March 2001	REVISED June 2009
		DD-856-02	SHEET 1 OF 3

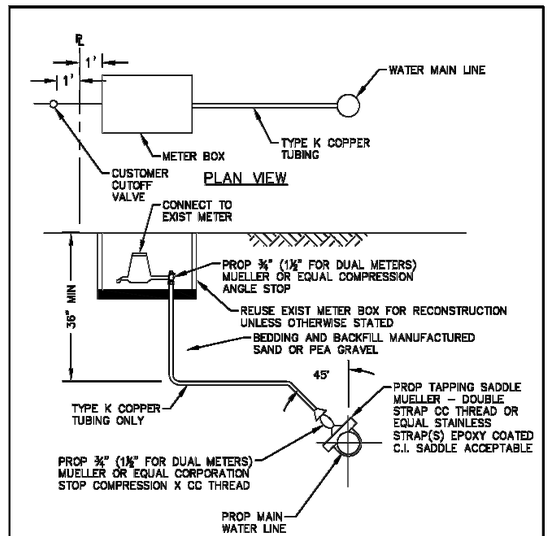


SIZE	BAND WIDTH	NO. RUNNERS PER TIE
8"	8"	2 TOP, 2 BOTTOM
12"	8"	2 TOP, 2 BOTTOM
16"	8"	2 TOP, 4 BOTTOM
20"	8"	2 TOP, 4 BOTTOM
24"	8"	2 TOP, 4 BOTTOM
30"	12"	2 TOP, 4 BOTTOM
36"	12"	2 TOP, 4 BOTTOM

PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	PAVEMENT INSTALLATION OF PIPE IN BORE (JOINT RESTRAINT)	APPROVED March 2008	REVISED
		DD-856-02	SHEET 2 OF 3



PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	INSTALLATION OF PIPE IN BORE (JOINT RESTRAINT)	APPROVED March 2008	REVISED
		DD-856-02	SHEET 3 OF 3

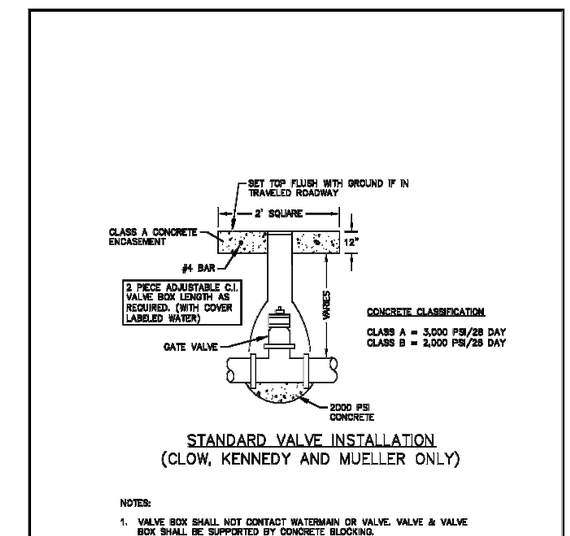


RESIDENTIAL SERVICE CONNECTION (WATER)

NOTE:

1. WATER SERVICE SHALL BE REPLACED FROM MAIN TO EXISTING WATER METER. SERVICE LINE BACKFILL SHALL BE MANUFACTURED SAND.

THE CITY OF SEGUIN	DATE ISSUED: JUNE 1, 2013	TITLE: RESIDENTIAL SERVICE CONNECTTION (WATER)
	REV / DATE / BY	SCALE: N.T.S. DRAWING No. WTR-5



STANDARD VALVE INSTALLATION
(CLOW, KENNEDY AND MUELLER ONLY)

NOTES:

1. VALVE BOX SHALL NOT CONTACT WATERMAIN OR VALVE. VALVE & VALVE BOX SHALL BE SUPPORTED BY CONCRETE BLOCKING.
2. VALVE STEM RISER TO BE WITHIN 3' OF SURFACE.
3. CONTRACTOR MAY CONSTRUCT CONCRETE ENCASEMENT AFTER STREET RECONSTRUCTION. ASPHALT SHALL BE SAW-CUT IN NEAT DIMENSIONS.
4. READY MIX OR LEANCRETE IS NOT ACCEPTABLE FOR ENCASEMENT.
5. ALL BACKFILL MATERIAL SHALL MEET ASTM C-33 CRUSHED STONE #57.

THE CITY OF SEGUIN	DATE ISSUED: JUNE 1, 2013	TITLE: STANDARD VALVE INSTALLATION
	REV / DATE / BY	SCALE: N.T.S. DRAWING No. WTR-4

THE CITY OF
Seguin
TEXAS

BS 123
12" WATER MAIN LOOP PHASE II & III

FROM HWY 90A AT PRESTON SOUTH TO FM 466 (EASTWOOD DR) EAST AND SOUTH TO COUNTRY SIDE BOULEVARD.

CITY OF SEGUIN, TEXAS

klotz associates
7550 IH-10 West
Northwest Center, Suite 300
San Antonio, TX 78229
Phone: (210) 736-0425
Fax: (210) 736-0405
sanantonio.office@klotz.com
Texas PE Firm Reg. #F-929

SURVEY BENCHMARK:

BEARING BASED ON NAVD 1988 – TEXAS STATE PLANE COORDINATES, SOUTH CENTRAL ZONE.

#1) TXDOT ALUMINUM MONUMENT LOCATED ON EAST COURT STREET (US 90A) 21.06' FROM THE NORTHWEST CORNER OF LOT 15 (VOL. 719, PG 1217) ELEVATION=523.05

#2) A FOUND ½" REBAR WITH CAP "BA." ELEVATION=522.78'

#3) SANIATRY SEWER MANHOLE LOCATED 350' SOUTH OF COUNTRY LANE ON COUNTRYSIDE DRIVE. ELEVATION=531.26'

#4) SANITARY SEWER MANHOLE LOCATED WEST ON COUNTRYSIDE ESTATES LOT 7 (VOL.5, PG 293B M.R). ELEVATION=533.10'

REV	DESCRIPTION	BY	DATE

WATER LINE CONSTRUCTION DETAILS
SHEET 4 OF 4

STATE OF TEXAS
LUIS A. CUELLAR
89656
REGISTERED PROFESSIONAL ENGINEER

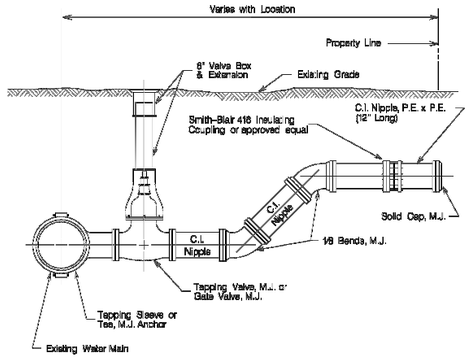
08/01/2014

CITY OF SEGUIN
123 BYPASS WATER LOOP

Klotz Project No 0131.001.001

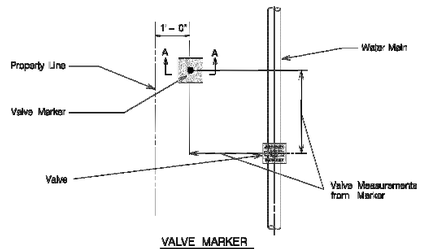
Drawn By BAL	Checked By LAC
Scale	Date July 2013
DWG No C17.0	Sheet 17 Of 18

T:\0131.001.001\07.00 CADD\02-Construction Drawings\0131.001 C15.0-C17.0_WTR Details-Revised.dwg Jul 26 2013



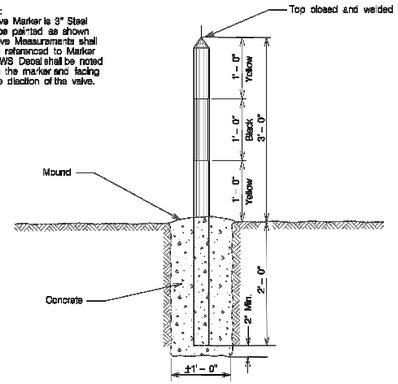
Notes:
Thrust Blocking as per San Antonio Water System Specifications.
C-900 pipe may be used on short services with no vertical change.
If C-900 pipe is used, Insulating Coupling is not required.

PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	4", 6" & 8" NON-METERED FIRE SERVICE	APPROVED March 2008	REVISED	SHEET 1 OF 1
		DD-824-21		



VALVE MARKER

Notes:
1. Valve Marker is 3" Steel pipe painted as shown
2. Valve Measurements shall be referenced to Marker
3. SAWS Decal shall be noted on the marker and facing the direction of the valve.



SECTION A-A

PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	VALVE MARKER	APPROVED March 2008	REVISED	SHEET 1 OF 1
		DD-828-04		

CITY OF SEGUIN
WATER SYSTEM MATERIAL STANDARDS

MATERIAL SPECIFICATION NUMBER: 573 085 00004

STOCK DESCRIPTION: Meter Box, Square. To be used with 1-1/2" to 2" Meters

SPECIFICATIONS: PVC Meter Box.
Approximate Size: 14" Wide x 16" Long x 12" Deep
Lid to be AMR Compatible. To be used with Aclara Star
Fixed Network System (Hexagram).
Lid Shall Have S Lock and S Bolt Locking System
"Water" and "City of Seguin" Shall be Printed on Lid

Approved Vendor	Approved Mfg.	Part#
ACT Pipe		
Big Country		
Ferguson		
GA Powers		
HD Supply Waterworks	DFW	1324C-1SA
Morrison Supply		
Municipal Waterworks		

07/05/13

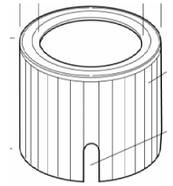
573 085 00004

CITY OF SEGUIN
WATER SYSTEM MATERIAL STANDARDS

MATERIAL SPECIFICATION NUMBER: 573 085 00001

STOCK DESCRIPTION: Meter Can and Locking Plastic Lid to be used with 5/8" to 1" Meters

SPECIFICATIONS: Can: Round PVC
Crush Resistant Ribbing on Outside of Box
Approximately 2" Base Footing to Eliminate Sinking
Approximately 2" Lip Molded into Top of Can to Help Stabilize Cast Iron Ring
Approximately 14" Wide x 16" Deep
Lid: AMR Compatible. To be Used with Aclara Star Fixed Network System. (Hexagram)
Lid Shall Have a Minimum ¾ Wide AMR Mount
Measuring Approximately 8" x 51/2" to Accommodate the Above AMR System
H20 Load Bearing
S Lock and S Bolt Installed In Lid
Lid to say "Water" and "City of Seguin"



Approved Vendor	Approved Mfg.	Part#
ACT Pipe		
HD Waterworks	DFW	DFW1814F-1B Star Seg
Big Country		
Ferguson		
HD Supply Waterworks		
Morrison Supply		
Municipal Waterworks		

07/05/13

573 085 00001

THE CITY OF Seguin TEXAS

BS 123
12" WATER MAIN LOOP PHASE II & III

FROM HWY 90A AT PRESTON SOUTH TO FM 466 (EASTWOOD DR) EAST AND SOUTH TO COUNTRY SIDE BOULEVARD.

CITY OF SEGUIN, TEXAS

klotz associates
7550 IH-10 West
Northwest Center, Suite 300
San Antonio, TX 78229
Phone: (210) 736-0425
Fax: (210) 736-0405
sanantonio.office@klotz.com
Texas PE Firm Reg. #F-929

SURVEY BENCHMARK:

BEARING BASED ON NAVD 1988 – TEXAS STATE PLANE COORDINATES, SOUTH CENTRAL ZONE.

#1) TXDOT ALUMINUM MONUMENT LOCATED ON EAST COURT STREET (US 90A) 21.06' FROM THE NORTHWEST CORNER OF LOT 15 (VOL. 719, PG 1217) ELEVATION=523.05

#2) A FOUND ½" REBAR WITH CAP "BA." ELEVATION=522.78'

#3) SANIATRY SEWER MANHOLE LOCATED 350' SOUTH OF COUNTRY LANE ON COUNTRYSIDE DRIVE. ELEVATION=531.26'

#4) SANITARY SEWER MANHOLE LOCATED WEST ON COUNTRYSIDE ESTATES LOT 7 (VOL.5, PG 293B M.R). ELEVATION=533.10'

REV	DESCRIPTION	BY	DATE

WATER LINE CONSTRUCTION DETAILS
SHEET 4 OF 4

STATE OF TEXAS
LUIS A. CUELLAR
89656
REGISTERED
PROFESSIONAL ENGINEER

08/01/2014

CITY OF SEGUIN
123 BYPASS WATER LOOP

Klotz Project No 0131.001.001

Drawn By BAL	Checked By LAC
Scale	Date July 2013
DWG No C18.0	Sheet 18 Of 18

T:\0131.001.001\07.00 CADD\02-Construction Drawings\0131.001 C15.0-C17.0_WTR Details-Revised.dwg Jul 26 2013